



2 | Operations Strategy in a Global Environment

OM 201 Principle of Operations Management

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Lecture Outline

Topics

- Operations and Productivity
- Productivity and competitiveness
- Case discussion

Learning Objectives

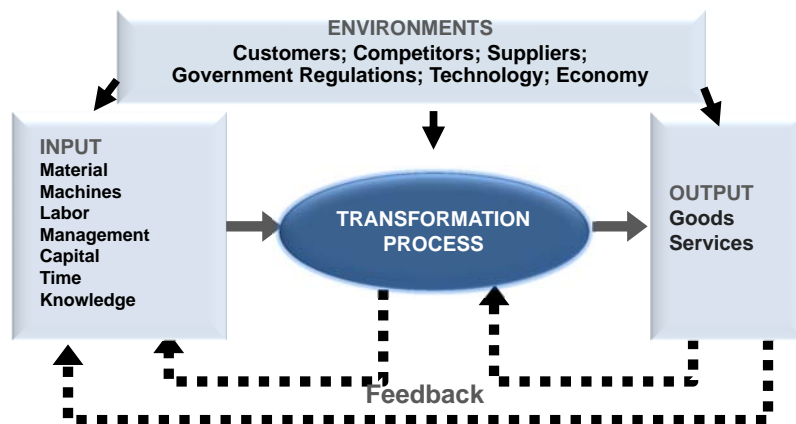
- To understand the meaning and applications of operation and productivity
- To calculate the productivity

Reference

- Roberta Russell & Bernard W. Taylor, (2011), *Operations Management* (CHAPTER 1) Ed 7, John Wiley & Son

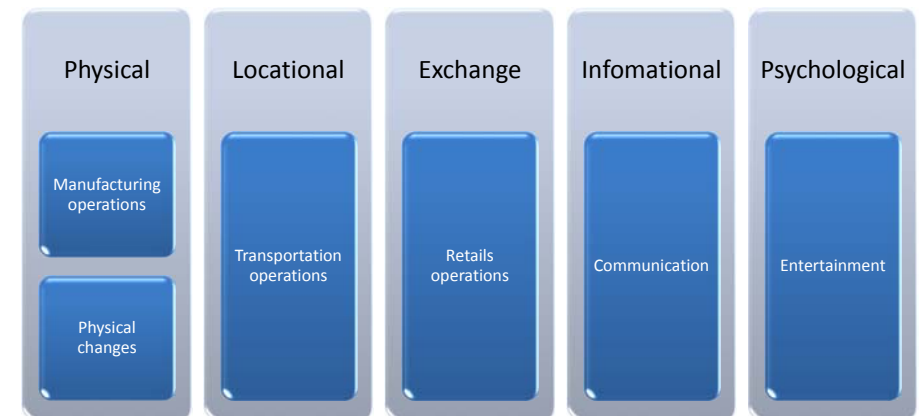
Operations as Transformation process

A transformation process :
a use of resources to transform inputs into some desired outputs

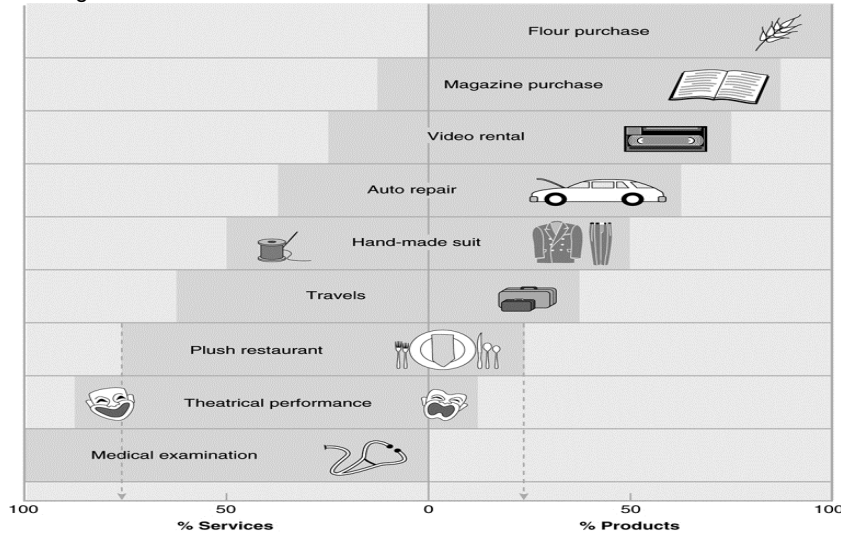


Transformation Processes

Transformation system that adds value to the products or services



Range from Service to Product



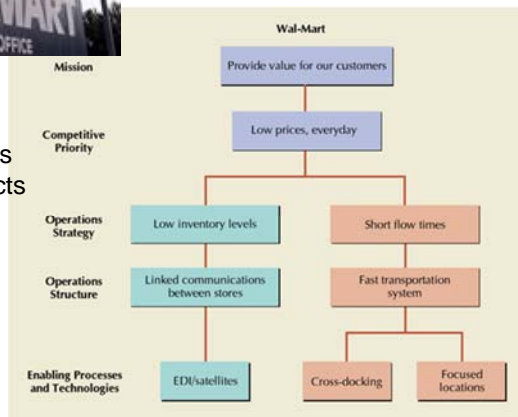
Strategy

Business Strategy: A set of objectives, plans, and policies for the organization to compete successfully in its markets



Operations Strategy at Walmart's

How business strategy affects operations...



PTT – LIFE Station

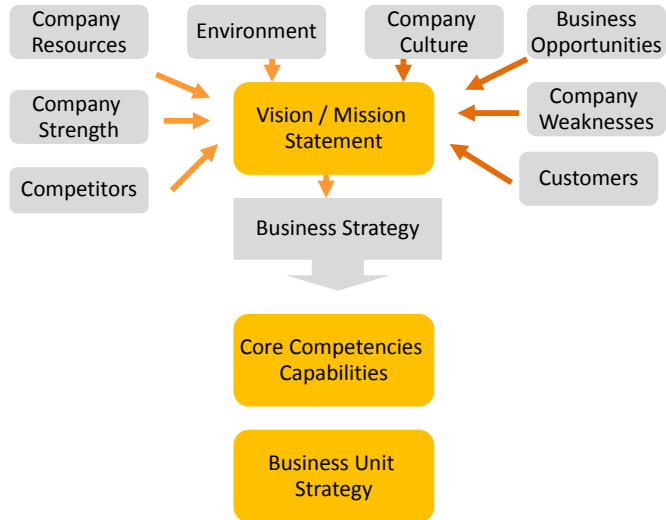
Sitting on a 4.5 rai expanse of land, the green and clean petrol station offers heartfelt service both to the military and their families and the general public. Income earned from the petrol station will contribute to the welfare of military personnel and their families.

The "Pump in the Park" also provides the first drive-through banking services in Thailand, courtesy of Bank of Ayudhya PLC. Now you can clear cheques, make deposits and withdrawals, pay bills and perform other ATM-based functions while still in your car. Also provided at the Pump in the Park are lubricant services, Café Amazon coffee shop, A&W restaurant, 7-Eleven, Imagine shop, Anda Food Channel fast-food and a pharmacy. Pump in the Park station offers a full array of petrol via six pumps with 36 hoses. PTT's "Pump in the Park" makes a great rendezvous and place for short stops during long journeys.

Source: <http://www.bangkokpost.net/holidaytime/>



Strategy Formulation



Competitive Priorities



The **critical dimensions** that a process must possess to satisfy its **internal** or **external** customers, both **now** and in the **future**

Competing on cost

- Low cost operations
- Eliminate all waste
- Invest in new equipment

Competing on quality

- Top quality
- Consistent quality
- Understand customer's expectation of quality

Competing on Speed

- Delivery speed
- On-time delivery
- Development speed; Fast adaptation; Fast move

Competing on Flexibility

- Produce wide variety of products
- Modify existing product quickly

Provide some practical firms / organizations that can be categorized as above



SONY



Competitive Priorities: *Cost*

Lincoln Electric

reduced costs by \$10 million a year for 10 years
skilled machine operators save the company millions that would have been spent on automated equipment

Southwest Airlines

one type of airplane facilitates crew changes, record-keeping, maintenance, and inventory costs
direct flights mean no baggage transfers
\$30 million annual savings in travel agent commissions by requiring customers to contact the airline directly

Competitive Priorities: *Quality*



Mandarin Oriental Hotel

- Every employee is empowered to satisfy a guest's wish
- Teams at all levels set objectives and devise quality action plans
- Each hotel has a quality leader
- Quality reports tracks
- guest room preventive maintenance cycles
- percentage of check-ins with no waiting
- time spent to achieve industry-best clean room appearance
- Guest Preference Reports are recorded in a database

Competitive Priorities: *Speed*

Pizza Delivery / Insurance company

Guarantee delivery within 30 minutes

Bakery Product

Guarantee custom made cake less than 3 hours

E-bay.com

ships orders the day they are received

Wal-Mart

replenishes its stock twice a week

Hewlett-Packard

produces electronic testing equipment in five days

Dell

ships custom-built computers in two days

Motorola

needs less than 30 minutes to build to order pagers

Competitive Priorities: *Flexibility*

Andersen Windows

number of products offered grew from 28,000 to 86,000

number of errors are down to 1 per 200 truckloads

Custom Foot Shoe Store:

customer's feet are scanned electronically to capture measurements

custom shoes are mailed to the customer's home in weeks

prices are comparable to off-the-shelf shoes

National Bicycle Industrial Company

offers 11,231,862 variations

delivers within two weeks at costs only 10% above standard models

“How Southwest Airlines became No.1”



Credit: Narwhales Group | OM201 | BBA 01-2554



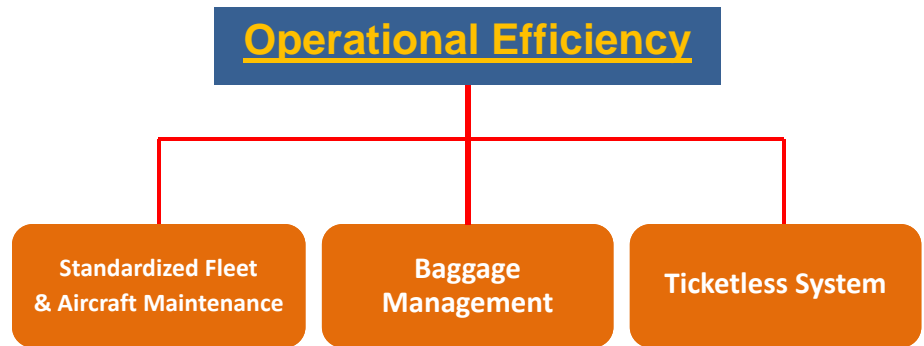
- Operational Efficiency
- Location Strategy
- Quality Management

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Operational Efficiency



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“Standardized Fleet”



- Boeing737 series: B737-300, B737-500 and B737-700
- Southwest flies more Boeing737 than other airlines in the world

- Employee Efficiency
- Staff Training

“Aircraft Maintenance”

- Reduce maintenance costs
- Store less spare-part inventories
- Low capital set aside
- Speed up the maintenance and fixing time for each plane

Credit: Narwhales Group | OM201 | BBA 01-2554



Operational Efficiency

"Baggage Management"

Southwest uses "Bag Fly Free" strategy allowing two checked bags for free

Efficiency
- Bags can be loaded and unloaded much faster
- Baggage capacity is fairly consistent due to one model of airplane

More revenue

- Gain more market share and reputation for being friendly with customers' luggage
- Southwest serves more passengers than any airline in the United States



Credit: Narwhales Group | OM201 | BBA 01-2554



Operational Efficiency

"Ticketless System"

Southwest is the first airline that allows customers to fly without tickets

Advantages

- Simplify the complex process of ticketing
- Reduce costs associated with tickets
- Increase convenience and flexibility at airport counter
- Things are easier to handle at the airport
- Provide passengers with another alternative for booking tickets

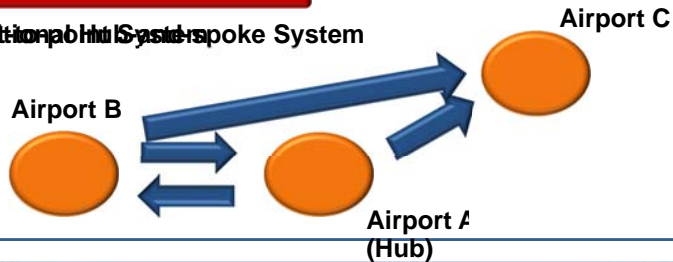
Credit: Narwhales Group | OM201 | BBA 01-2554



Location Strategy

Routing System

Positional Hub System



Advantages

- Allows the more airports
- Repairs car
- Increased flexibility: ability fly planes to where there is demand
- Can choose the shortest route: save fuel costs
- Elimination of:
• Check-ups at hub airport
• Knock-on delays caused by connecting flights

Credit: Narwhales Group | OM201 | BBA 01-2554



Location Strategy

Airport Selection

Primary Airports



Not-cost effective for Southwest

Secondary Airports

Ability to use smaller airports

Decrease in costs

Lack of congestion

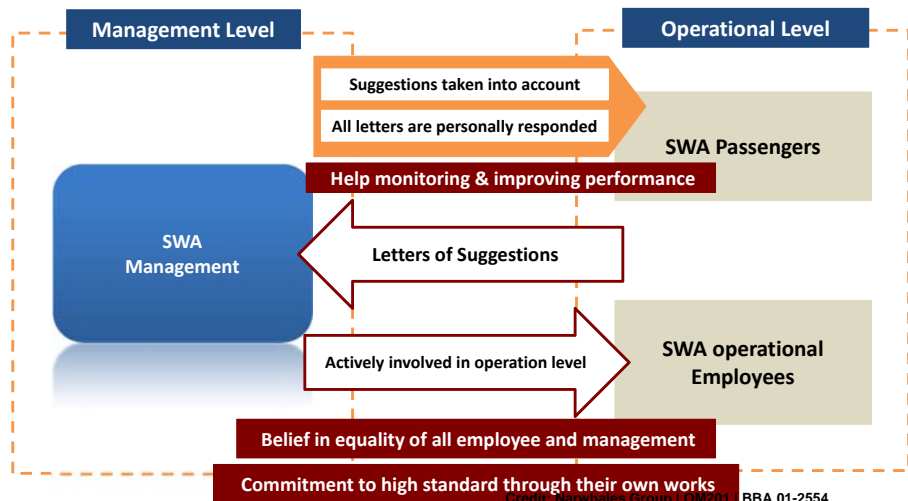
Chicago: O'Hare → Midway
New York: JFK → LaGuardia



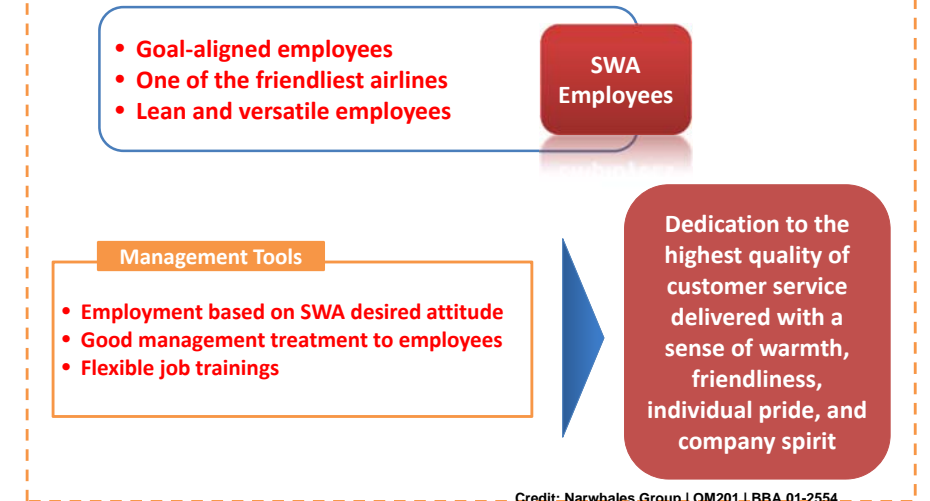
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Quality Management



Quality Management

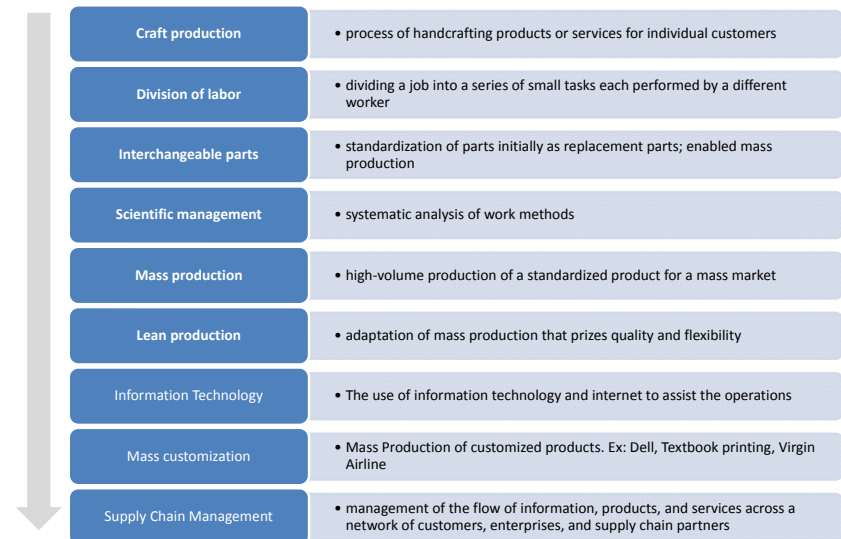


Conclusion



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Evolution of Operations Management



Mass Customization



Any other?

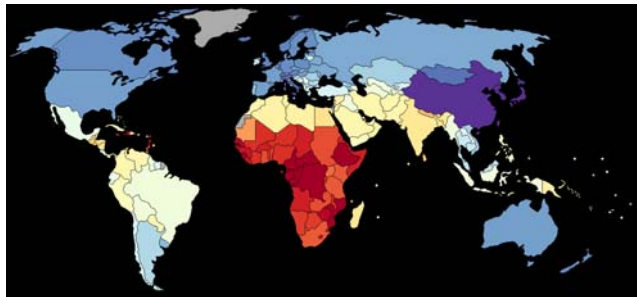
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Competitive vs Productivity

- Competitiveness**
 - degree to which a nation can produce goods and services that meet the test of international markets
- Productivity**
 - ratio of output to input
- Output**
 - sales made, products produced, customers served, meals delivered, or calls answered
- Input**
 - labor hours, investment in equipment, material usage, or square footage

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Which country is most productive?



	Units of Output	Labor Hours
USA	136	89.5
Germany	100	83.6
Japan	102	72.7

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Productivity Measurement

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

Labor Productivity

- Units of output per labor-hour
- Dollar output per labor-hour

Machine Productivity

- Units of output per mc-hr

Capital Productivity

- Units of output per dollar input
- Dollar output per dollar input
- Inventory turnover ratio (dollar sales per dollar inventory)

Energy Productivity

- Units of output per kWatt-hour

Productivity Measurement

Single Factor-Productivity		
$\frac{\text{Output}}{\text{Labor}}$	$\frac{\text{Output}}{\text{Materials}}$	$\frac{\text{Output}}{\text{Capital}}$
Multifactor Productivity		
$\frac{\text{Output}}{\text{Labor} + \text{Materials} + \text{Overhead}}$		$\frac{\text{Output}}{\text{Labor} + \text{Energy} + \text{Capital}}$
Total Factor Productivity		
$\frac{\text{Goods and services produced}}{\text{All inputs used to produce them}}$		

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Productivity increases

Become efficient	• output increases with little or no increase in input
Expand	• both output and input grow with output growing more rapidly
Achieve breakthroughs	• output increases while input decreases
Downsize	• output remains the same and input is reduced
Retrench	• both output and input decrease, with input decreasing at a faster rate

Process / Service Innovation

Operations and Global Competitiveness

6 primary characteristics of the transformation system:

Efficiency:

- “doing things right”

Effectiveness:

- “doing right things”

Capacity:

- attainable maximum production rate

Quality:

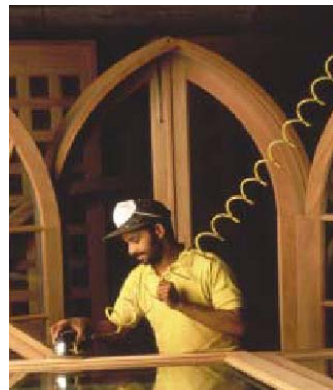
- by consumer’s and producer’s perspective

Response time:

- how quickly can the output be produced?

Flexibility:

- can the system be used to produce different output? How easily? How fast?



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Issues and Trends in Operations

- Global Markets, Global Sourcing, and Global Operations
- Collaborative Commerce
- Virtual Companies
- Technological Advances
- Greater Choice, More Individualism
- Knowledge and Ability to Learn
- Emphasis on Service
- Environmental and Social Responsibilities
- Operations Risk Management

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Case Study: Thai Floods 2011 Disrupt Computer Hard Drive Supply

The floods shut down several HDD factories in the Asian country, which supplies about 45 percent of the world's HDD market in the first half of 2011.

