



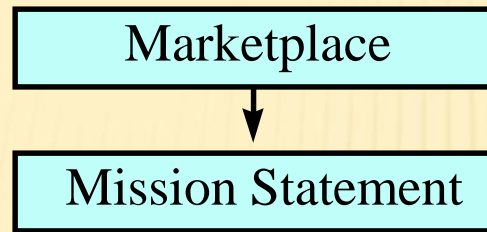
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MODULE 2 – OPERATIONS STRATEGY

OVERVIEW – MODULE 2

- ✘ Business (corporate strategy)
- ✘ Operations strategy
- ✘ Competitiveness
 - + Productivity

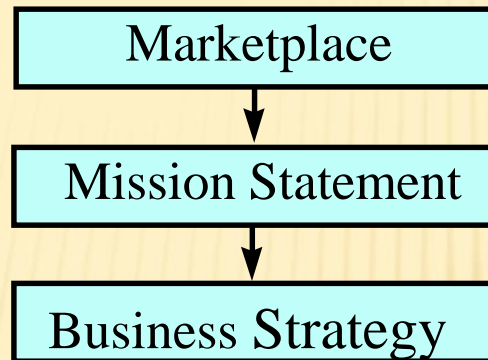
MISSION STATEMENT



- ✘ Defines the firm's reason for existence
- ✘ Example: Dell

How does Dell accomplish this mission?

BUSINESS STRATEGY



- ✘ How the company's mission is accomplished
 - + Provides vision & consistency of decisions
 - + Keeps company moving in right direction
 - + Defines an organization's:
 - Primary task
 - Competitive priorities

BUSINESS STRATEGY

- × Provides The “How”
 - × 1. Primary Task of Organization
 - × 2. Competitive Priorities
- × Operations Strategy → How to Best Utilize Resources to Support Business Strategy

COMPETITIVE PRIORITIES - AS RELATED TO OPERATIONS

- × Cost
- × Quality
- × Delivery
- × Flexibility

FOR DELL?

- low cost
 - direct relationships
- high flexibility
 - customizable PCs

COMPETING ON COST?



- ✘ Typically High Volume Products
- ✘ Often Limit Product Range & Offer Little Customization
- ✘ May Invest in Automation to Reduce Unit Costs
- ✘ Can Use Lower Skill Labor
- ✘ Probably Use Product Focused Layouts

COMPETING ON QUALITY?

- ✘ High Performance Design:
 - + Superior features, high durability, & excellent customer service
- ✘ Product & Service Consistency:
 - + Meets design specifications
 - + Close tolerances
 - + Error free delivery



COMPETING ON TIME?



- × Fast Delivery
 - + Focused on shorter time between order placement and delivery

- × On-time Delivery
 - + Deliver product exactly when needed every time

- × Rapid Development Speed
 - + Using concurrent processes to shorten product development time

COMPETING ON FLEXIBILITY?

× Product flexibility

- + Easily switch production from one item to another
- + Easily customize product/service to meet specific requirements of a customer

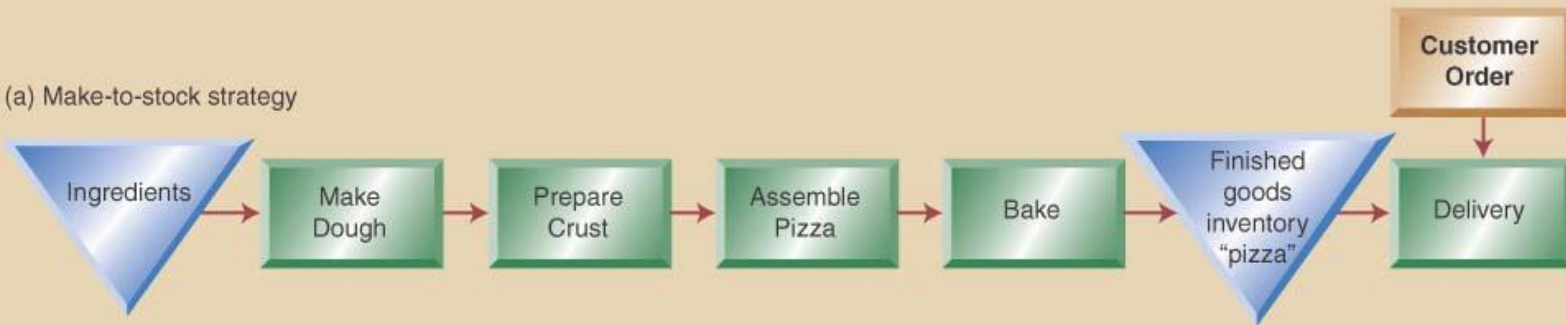
× Volume flexibility

- + Ability to ramp production up and down to match market demands

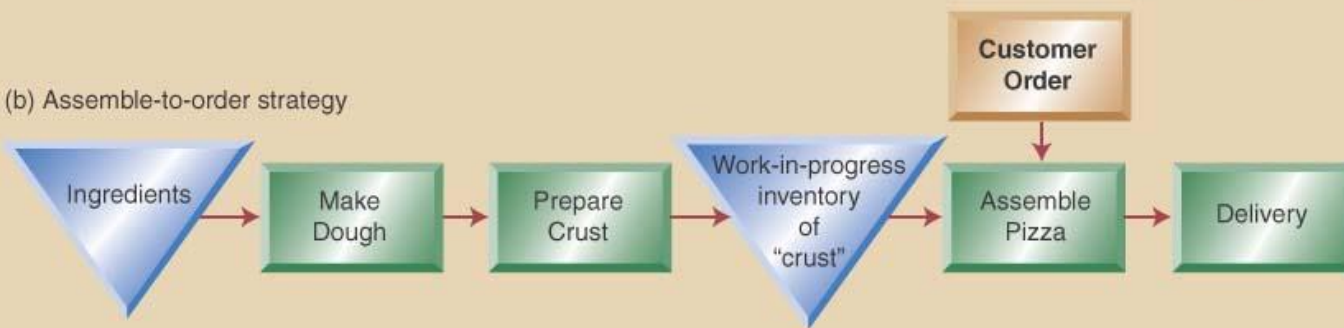


FLOWCHARTS FOR PROCESS CHOICE

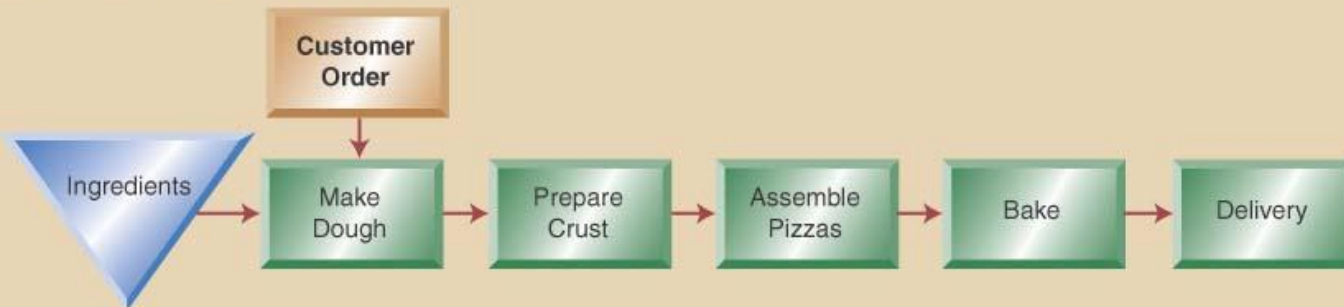
(a) Make-to-stock strategy



(b) Assemble-to-order strategy



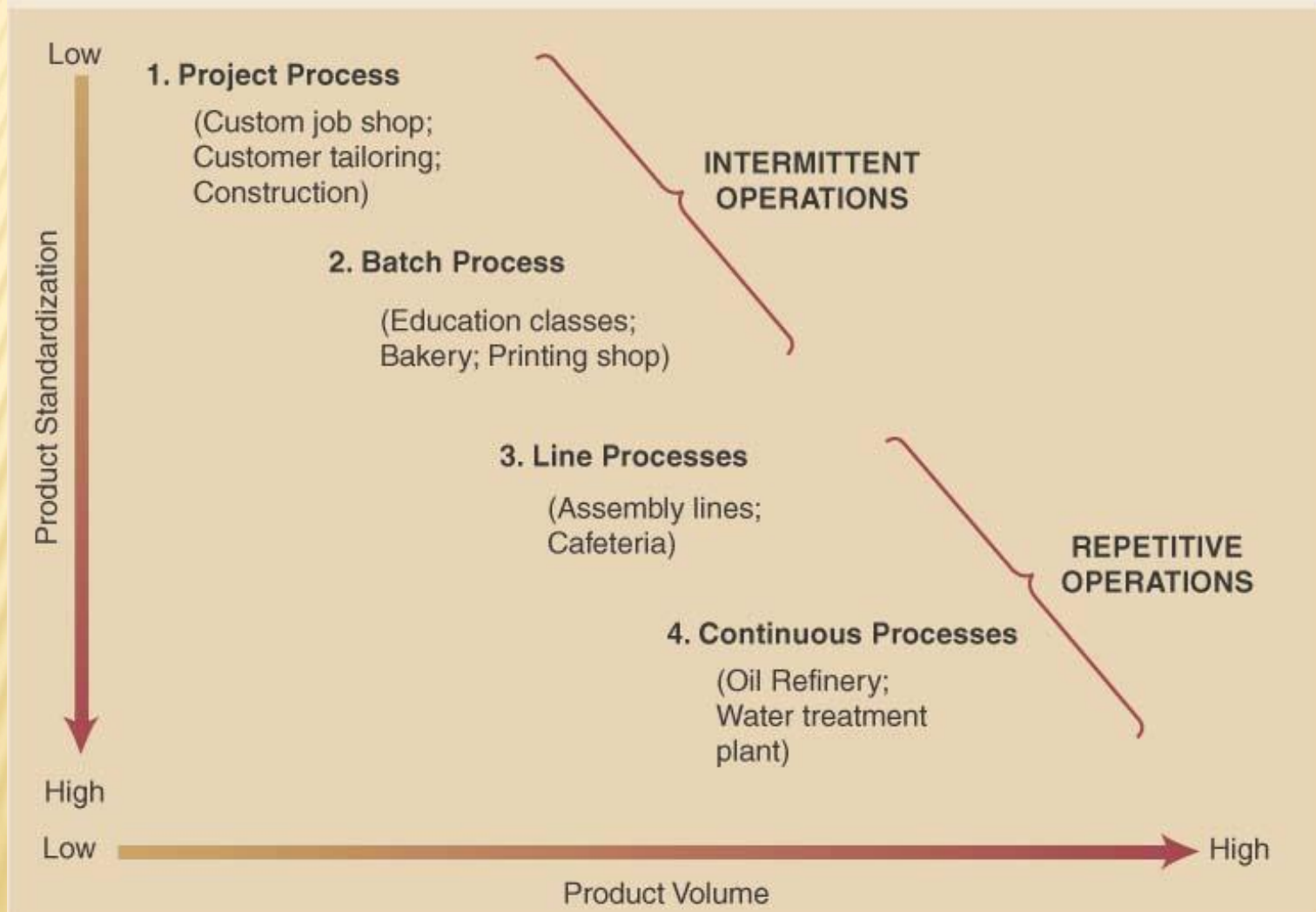
(c) Make-to-order strategy



PRODUCT-PROCESS MATRIX

- ✘ **Product-process matrix:** matches product characteristics with the appropriate choice of production process
- ✘ There is a tradeoff between high-volume standardized products that get produced for a low per-unit cost and low-volume customized products that have a high per-unit cost.

UNDERLYING PROCESS RELATIONSHIP BETWEEN VOLUME AND STANDARDIZATION



DIFFERENCES BETWEEN INTERMITTENT AND REPETITIVE OPERATIONS

Decisions

- Product variety
- Degree of standardization
- Organization of resources
- Path of products
- Factor driving production
- Critical resource
- Type of equipment
- Degree of automation
- Throughput time
- WIP inventory

Intermittent

Operation

Great
Low

Grouped by function

Varied – product dependent
Customer orders

Labor
General purpose
Low
Longer
More

Repetitive

Operation

Small
High

Line flow

Line Flow
Demand Forecast

Capital
Specialized
High
Shorter
Less

PROJECTS

- **Project process:** a type of process that has a **high degree of customization**, a large scope, a high degree of customer involvement, and the use of primarily generalized tools and equipment
- A critical characteristic of projects is the requirement for close coordination among the various people and organizations involved with the project.
 - The 2008 Summer Olympics held in Beijing involved over 10,000 athletes, 37 competition venues, and over 70,000 volunteers.

BATCH PROCESSES

- ✘ **Batch process:** a higher-volume job shop, in which the same or similar products are produced repetitively
- + Examples: commercial printers that produce brochures or advertisements, production of clothing by size/style, micro breweries

LINE PROCESSES

- **Line processes:** processes that have high volumes, standardized products, and dedicated resources
 - Examples: computer assembly, food production (such as Kellogg's Corn Flakes), smart phone assembly
- Every step in the process is performed repetitively, over and over, with little variation.
- Advantage: both equipment and workers can be very specialized



CONTINUOUS PROCESSES

- **Continuous processes:** processes that have high volume and low flexibility, and that work with nondiscrete items that are not divided into their final packages until the very end of production
 - Examples: soda production, chemical production, brewing beer, and sugar and paint production
- Extremely capital intensive, very standardized, and very inflexible
- May be costly to stop to process



SERVICE-PROCESS MATRIX

- × **Customer involvement:**

the degree to which customers are involved in shaping the end service /products that they receive



- × **Labor intensity:**

the amount of labor needed to provide a service relative to the total amount of physical resources needed

SERVICE FACTORIES & SHOPS

- **Service factories:** services with both low customer contact/customization and a low degree of labor intensity
- **Service shops:** services with low labor intensity but high customer contact or customization
- Hospitals, auto and other repair services are excellent examples of service shops because while labor is a critical component, the capital investment in equipment and capacity is higher than the cost of labor.



MASS SERVICES

- ✘ **Mass services:** services with low customer contact or customization in combination with high labor intensity
- ✘ Retail companies, wholesalers, and schools are examples of mass services.



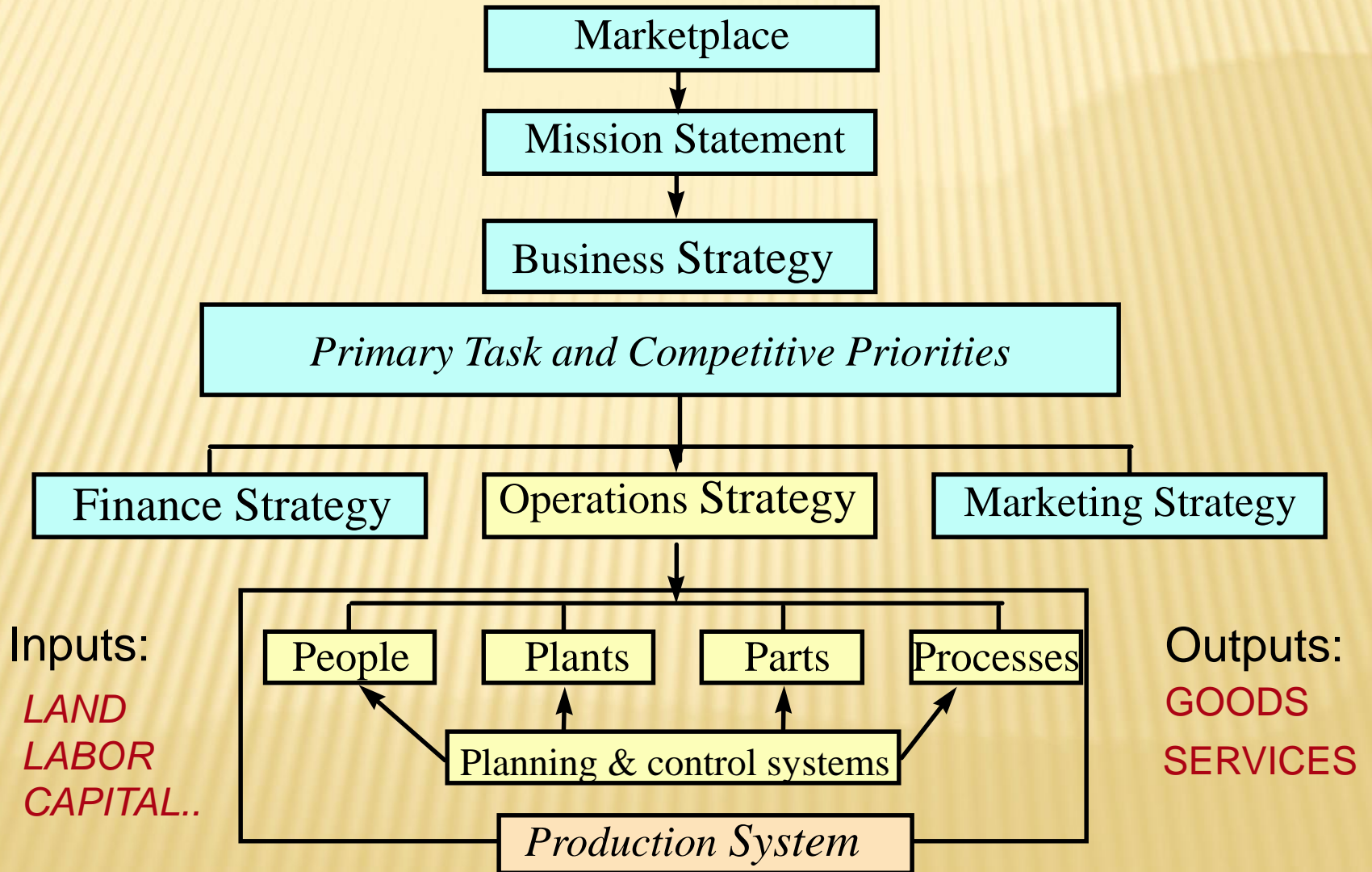
PROFESSIONAL SERVICES

- ✘ Services with both high customer contact or customization and a high degree of labor intensity
- ✘ Services provided by doctors, lawyers, accountants, and architects all have very high labor costs because of the large amount of education associated with these professions.

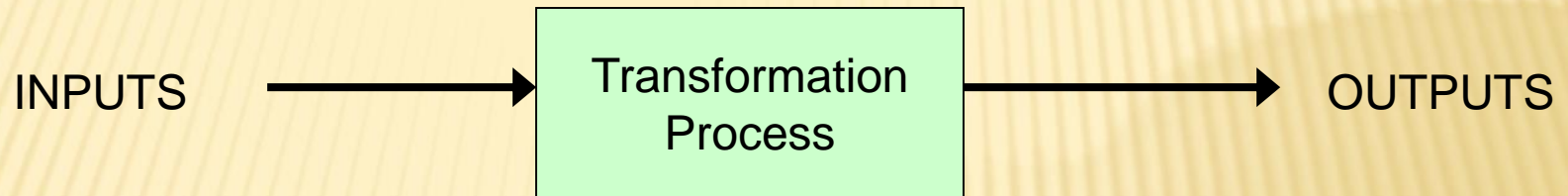


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OPERATIONS STRATEGY



COMPETITIVENESS - OPERATIONS



✘ How well are we doing?

Against competitors?
Over time?

+ Productivity measurements

✘ **scorecards of effective use of resources**

Productivity = _____

COMPETITIVENESS

To increase productivity...

- increase outputs
- decrease inputs
(required to produce output)

$$\text{Productivity} = \frac{\text{OUTPUTS}}{\text{INPUTS}}$$

ABSOLUTE PRODUCTIVITY VS. GROWTH

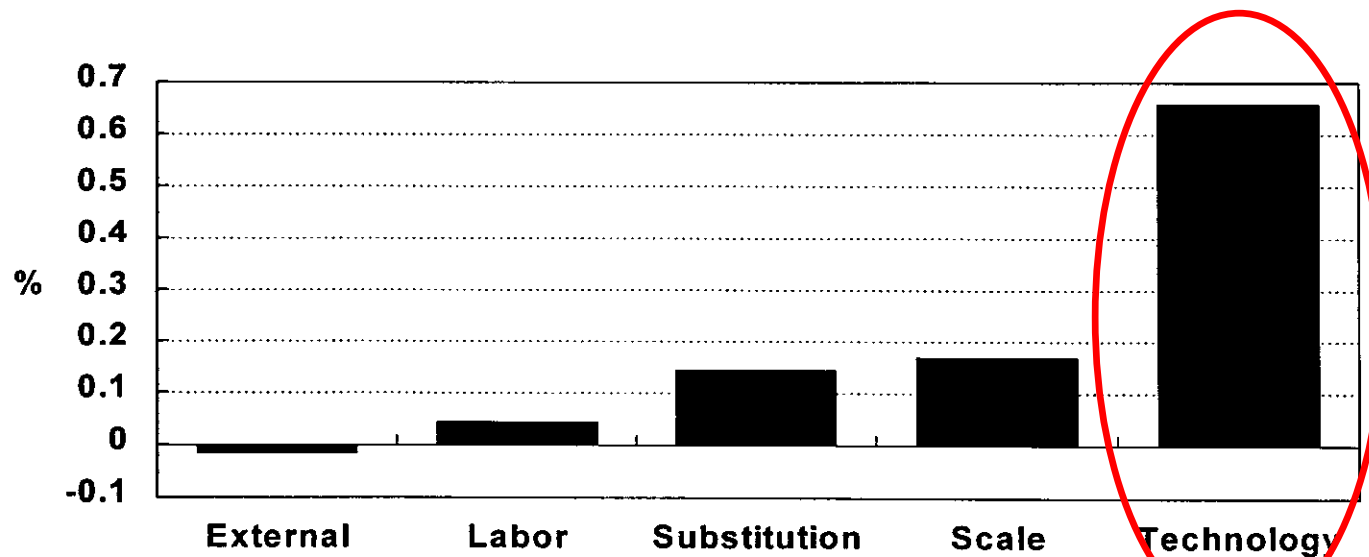
- ✘ Absolute = a snapshot in time
- ✘ Growth = change over time
- ✘ Growth = $(P2 - P1) / P1$
 - + Each productivity measure (P) should be the same type

SOURCES OF PRODUCTIVITY GROWTH

- × External factors
 - + environment, interest rates
- × Improved labor inputs
 - + education, demographics
- × Capital-labor substitution
- × Economies of scale
- × Technological change
 - + equipment and management

SOURCES OF GROWTH FROM 1948-1995

Sources of Productivity Growth 1948-1995



PROBLEM 1

As operations manager, you are concerned about being able to meet sales requirements in the coming months. You have been given the following production report. **Find the average total productivity per month (units per hour).**

	Jan	Feb	Mar	Apr
Units produced	2300	1800	2800	3000
Hours worked				
Per machine	325	200	400	320
# of machines	3	5	4	4

SOLUTION

	Jan	Feb	Mar	April
Units Produced	2300	1800	2800	3000
Hours per machine	325	200	400	320
# of machines	3	5	4	4

PROBLEM 2

For the previous data set, based on growth in productivity between March and April, how many units can we expect to produce in May, if operating resources for May are the same as they were in April and we experience the same gain in productivity?

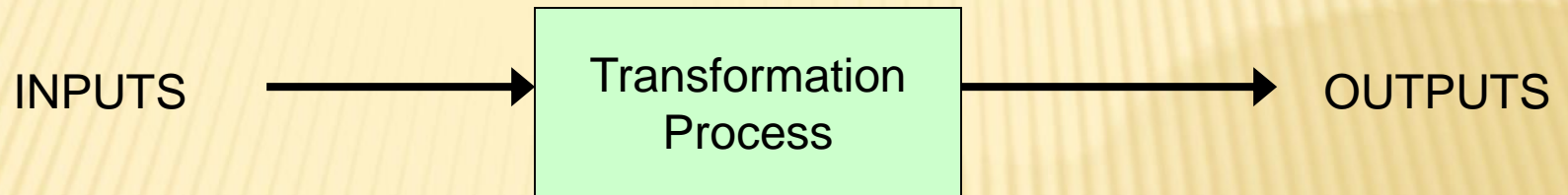
SOLUTION

	Jan	Feb	Mar	April
Units Produced	2300	1800	2800	3000
Hours per machine	325	200	400	320
# of machines	3	5	4	4
Productivity	2.36	1.80	1.75	2.34

Productivity Growth Rate (from Mar to April)

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PRODUCTIVITY: QUICK REVIEW



✘ How well are we doing?

Productivity = _____

PRODUCTIVITY: QUICK REVIEW

- ✘ Three kinds of productivity measures
 - + Total measures (over all inputs)
 - + Multi-factor measures (over some inputs)
 - + Partial measures (over one input)

MODULE 2: SUMMARY

- ✘ What is business strategy in relation to OPS?
- ✘ Name and describe 4 means to achieve competitive advantage as pertains to OPS?
- ✘ Name and describe 3 processes to manufacture a product
- ✘ Name and describe 2 vehicles to deliver services