

Principles of Operations Strategy

How operations can be used for
competitive advantage in today's
world

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• The course focuses on four key
issues

- Basic Principles
- Decision Category Framework
- Means of Competition
- New Imperatives of the 21st Century – globalization and outsourcing

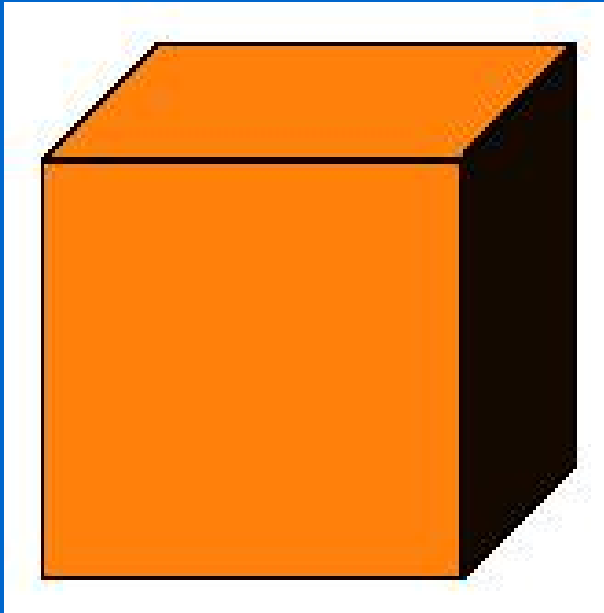
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A COMPANY'S MANUFACTURING FUNCTION TYPICALLY IS EITHER A COMPETITIVE WEAPON OR A CORPORATE MILLSTONE. IT IS SELDOM NEUTRAL. YET, THE CONNECTION BETWEEN MANUFACTURING AND CORPORATE SUCCESS IS RARELY SEEN AS MORE THAN THE ACHIEVEMENT OF HIGH EFFICIENCY AND LOW COSTS.

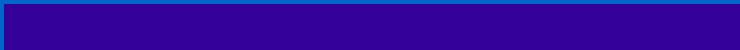
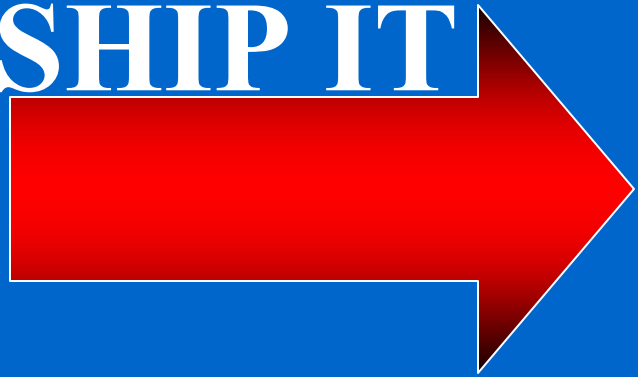
...WHAT APPEARS TO BE ROUTINE MANUFACTURING DECISIONS FREQUENTLY COME TO LIMIT THE CORPORATION'S STRATEGIC OPTIONS, BINDING IT WITH FACILITIES, EQUIPMENT, PERSONNEL, AND BASIC CONTROLS AND POLICIES TO A NONCOMPETITIVE POSTURE WHICH MAY TAKE YEARS TO TURN AROUND.

WICKHAM SKINNER
HBR, MAY-JUNE 1969

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SHIP IT



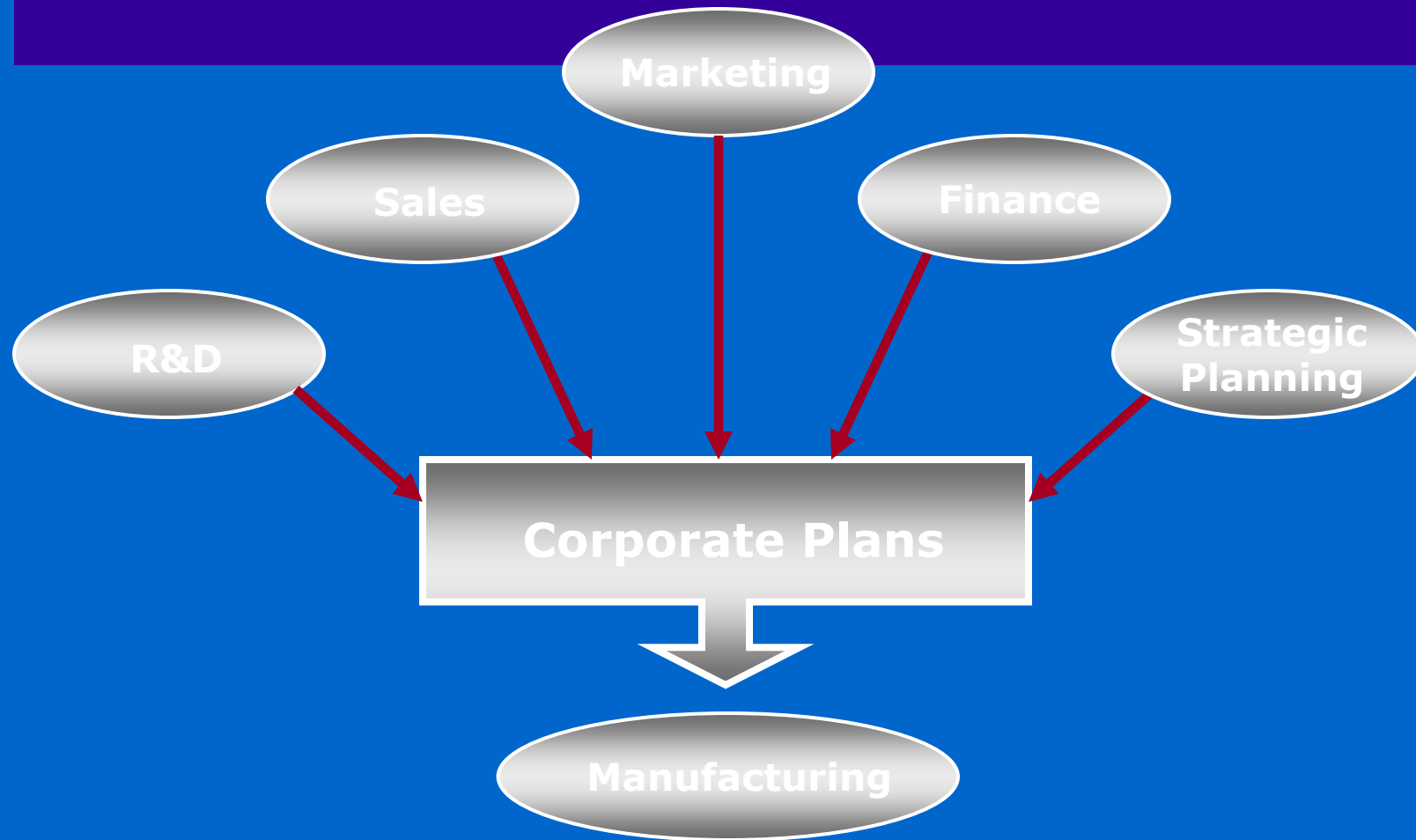
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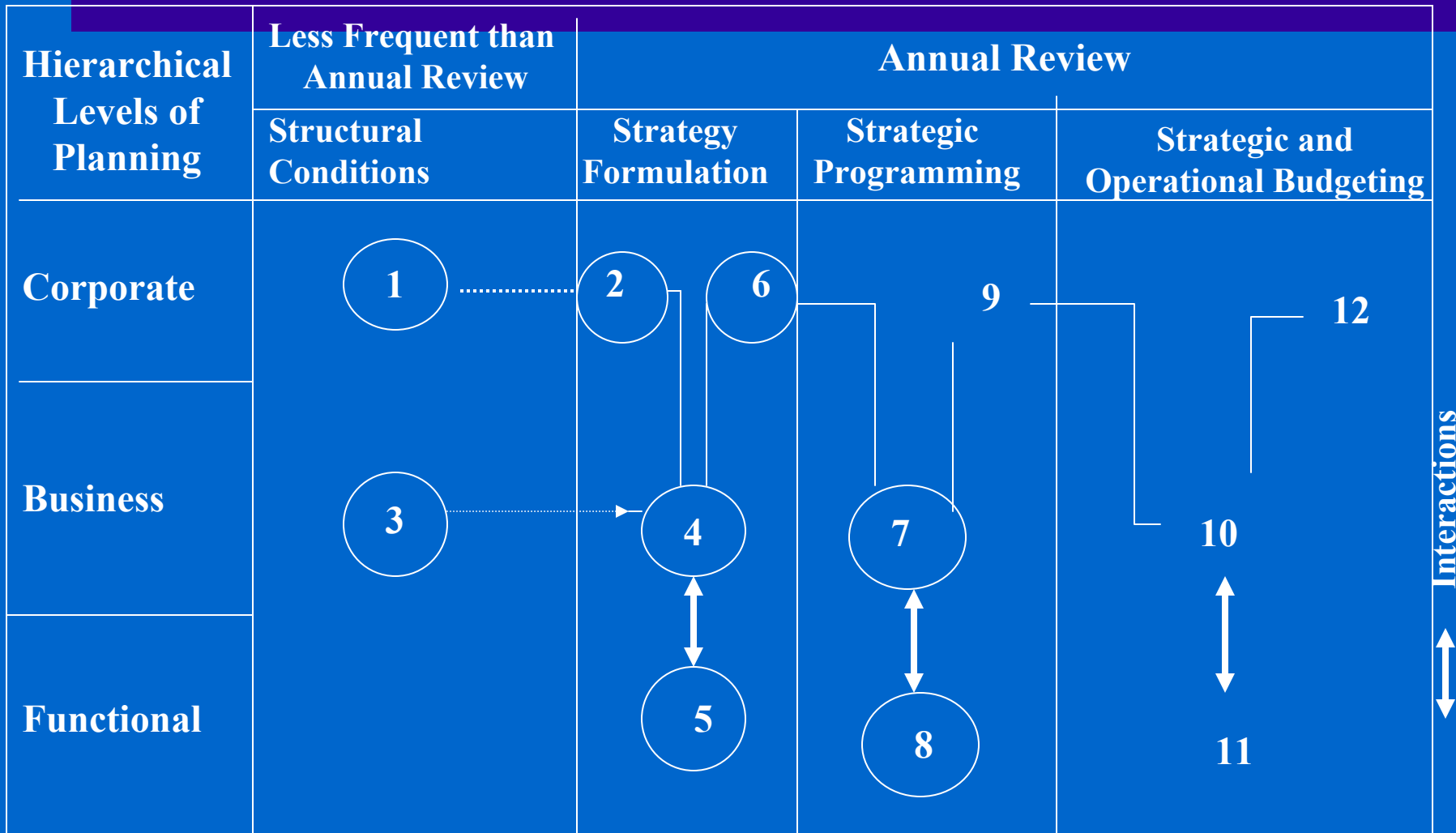
Problem one: conflicts

- More capacity
- Variety
- Cost
- Meeting targets
- Better forecasts
- Economical operations
- Other strategic criteria
- Maintaining quality

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• Problem two: role in strategy



The Corporate Strategic Planning Process



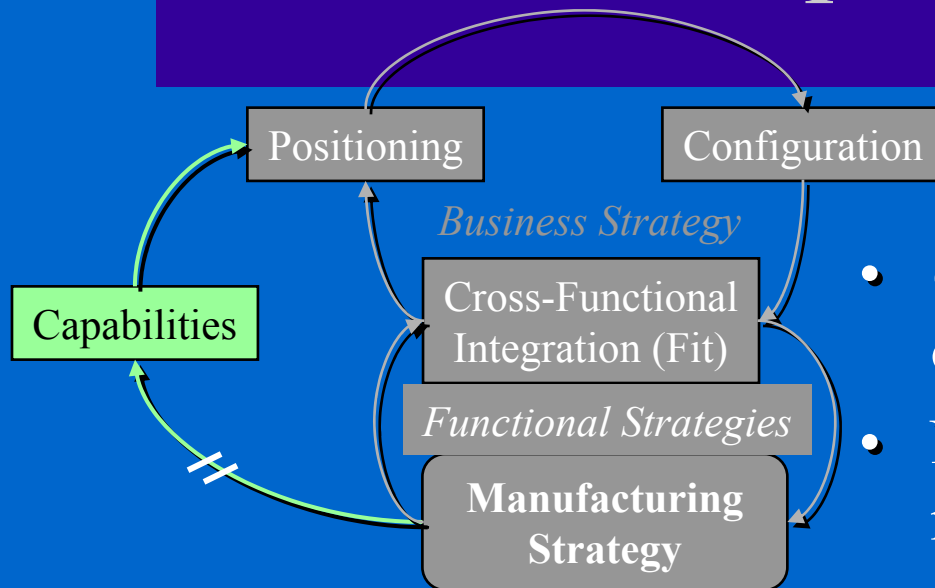
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The Business Strategy Literature Proposes Two Conflicting Modes of Strategy Development:

- Positioning (e.g., Porter)
 - Choose an explicit position in the marketplace
 - Identify the appropriate activities that must be executed to take that position
 - Operations excellence can be achieved by anyone, and is therefore not a source of competitive advantage
- Capabilities exploitation (e.g., Teece, Pisano)
 - Capabilities are the strategic consequence of functional execution
 - Capabilities cannot be easily bought or copied
 - New capabilities can form the basis of a new strategy

Capabilities



- **Capabilities: Strategic Consequence of Functional Execution**
- **New capabilities can form basis of new manufacturing strategy.**
- **Cannot buy or easily copy capabilities that take a long time to develop.**

D.L. Barton "Core Competency and Core Rigidity"

Prahalad and Hamel "The Core Competence of the Corporation"

Hayes and Pisano "The New Manufacturing Strategy"

Hayes and Upton "Operations-based Strategy"

External Influences

Industry Forces

External Influences

- Industry Attractiveness
- Competitive Structure: Opportunities & Threats

Goals Objectives

Strategic Plan: Gaining & Maintaining Competitive Advantage

Organization's "Culture"

- Capabilities: Sources of strengths/weaknesses

- Competitive priorities

Functional Strategies

Mktg.

Mfg.

Finance

Logistics

Key Success Factors:

- Internal Coherence
- Inter-functional Coordination
- Strategic Fit

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Companies vary considerably on this ideal approach

- Use of both capabilities and positioning
- Formality of process
- Type of formal method
- Input of operations
- Focus on all decision categories

Reasons for Inconsistent Manufacturing Structures

1. Manufacturing cannot modify the old manufacturing policies and structure.
2. Managers in manufacturing have no clear, consistent definition of the manufacturing task facing the organization.
3. The manufacturing policies and the infrastructure being employed are inconsistent.
4. The organization lacks a focus. It is attempting to cover too many technologies or too many products and markets, too wide a range volume, and more than one manufacturing task.

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Reasons for Inconsistent Manufacturing Structures (cont.)

5. The organization has the wrong equipment & process technology for the present manufacturing task.
6. Selection of products and processes for each plant in a multi-plant setup have no consistent focus.

- The decision category approach examines manufacturing decision categories for consistency with strategic vision

- Structural decisions

- bricks and mortar
- machinery

- Infrastructure

- people
- systems
- procedures

- Fit with business, corporation and other functions

Major Manufacturing Decision Categories

1. FACILITIES

- size
- location
- focus

2. CAPACITY

- amount
- timing
- type

3. VERTICAL INTEGRATION AND SUPPLIER MANAGEMENT

- direction
- extent
- interfaces
- collaboration

4. PRODUCTION TECHNOLOGIES AND PROCESSES

- equipment
- automation
- interconnectedness
- scale
- flexibility

5. WORK FORCE AND MANAGEMENT

- wage policies
- security
- skill levels

6. INFORMATION TECHNOLOGIES

- Use and level of investment
- Parity or differentiation

7. SUPPLY CHAIN AND MATERIALS

- logistics facilities and methods
- inventory policies
- vendor relations
- production planning

8. ORGANIZATION AND INCENTIVES

- structure
- reporting levels
- degree of centralization
- role of staff
- control/reward systems
- costing systems

9. BUSINESS PROCESSES

Product Development

- interfaces
- responsibilities
- vendor development

Quality Programs

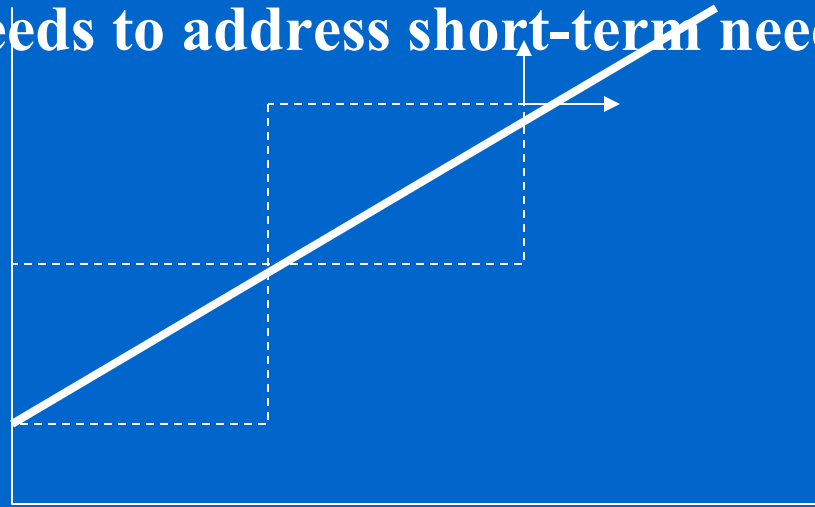
- monitoring
- intervention
- responsibilities

Other

Facilities and Capacities

Capacity Issues:

- Does Capacity lead or follow Demand:
- Capacity Decisions have long lead times and involve large increments
- Capacity needs to address short-term needs



Facility Issues:

- Pure Space Needs
- Geographic & Distribution Issues
- Focus Issues
- Functional Needs
- Scale Issues
- Means of Evaluation

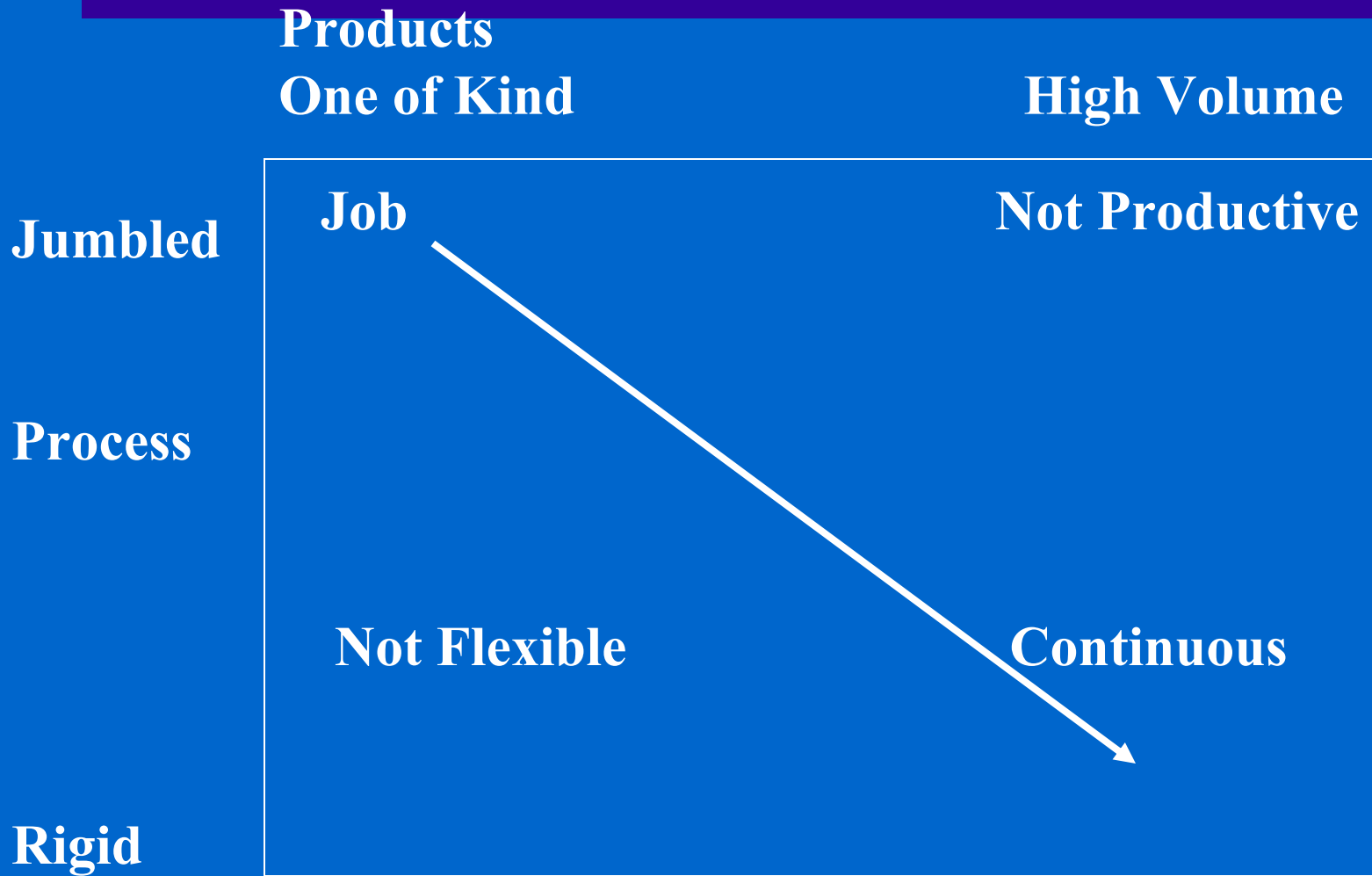
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Technology

Technology and the Manufacturing Process is a fundamental determinant of how a company competes

- Processes have specific attributes that are appropriate for different products and life cycles
- Any new process or technology will have a major effect on a business
- No technology meets all needs
- Products and businesses have life cycles that change process needs
- Multiple sites involve issues of management and focus

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**Process Productivity is Best Understood Through
the Process-Product Matrix**



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BASIC INFRASTRUCTURAL QUESTIONS

- Levels and strengths of Hierarchy
- Orientation and form of organization
- Class culture
- Information and control systems
- Role of materials and logistics
- Outsourcing and vertical integration (the most fundamental question of the day)

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The strategic mission matches the organization's strengths to a limited set of external measures of performance

Measures of Performance

- OPERATIONS COSTS
 - unit costs
 - total (volume) costs
 - lifetime costs
- AVAILABILITY
 - percentage of on-time shipments
 - response to requests for info or changes
 - product and volume flexibility
 - delivery time
- QUALITY
 - return rate
 - product reliability and durability
 - cost and rate of field repairs
- INNOVATIVENESS AND FEATURES
 - product innovativeness
 - time to market and development cycle
- ENVIRONMENTAL PERFORMANCE
 - Ease of disassembly and recycling
 - Use of resources

The Classic Strategies

Strategy	Technology	Infrastructure	Marketing & Sales
Low Unit Cost	Specialized equipment	Materials planning and control	Narrow line Price
High service Level	Reserve capacity	Inventory	Dependability
Wide line and custom products	Flexible machines Reserve capacity	Worker skills Scheduling	Customer needs
Product innovation	General purpose	Development Team skills	Market leadership New segments

- **Present Operations Policies**
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Operations Unit

Decision Category	Description of Past Policy	Strengths	Weaknesses
Production Technologies & Processes			
Capacity			
Workforce and Management			

- **Present Operations Policies (cont'd.)**
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Operations Unit

Decision Category	Description of Past Policy	Strengths	Weaknesses
Business Processes			
Facilities			
Vertical Integration			