A Framework for Operations Strategy

How operations can be used for competitive advantage in today’s world
Problem One: Conflicts

- More capacity
- Variety
- Cost
- Meeting targets

- Better forecasts
- Economical operations
- Other strategic criteria
- Maintaining quality
Problem Two: Role in Strategy

Corporate Plans

- Marketing
- Finance
- R&D
- Sales
- Strategic Planning
- Manufacturing
We first address some business strategy issues

• Which businesses should we be in?
• How do we compete and compare with our competitors in each one?
• What dimensions of customer performance do we focus on
• To answer these questions, we first look at alternative views of how individual businesses compete
Competitive Strategy: The Positioning View

Sources of Barriers to Entry
- Economies of scale
- Product differentiation and brand loyalty
- Capital requirements
- Switching costs
- Access to distribution channels
- Cost disadvantages independent of scale
- Proprietary product technology
- Favorable access to raw materials
- Favorable locations
- Government subsidies
- Learning or experience curve
- Government policy

Suppliers Have Power When:
- Fewer suppliers than those supplied
- No substitute products
- Industry is not an important customer
- Suppliers’ input is important to industry
- Supplier products are differentiated or switching costs are high
- Suppliers may forward integrate

Buyers Have Power When:
- Buyers are concentrated or purchase large volumes relative to industry sales
- Purchases represent a significant fraction of their costs
- Products purchased are standard or undifferentiated
- Buyers face few switching costs
- Buyers earn low profits
- Buyers can backward integrate
- Products purchased are unimportant to quality of buyers’ products
- Buyer has full information

Sources of Intense Rivalry
- Numerous or equally balanced competitors
- Slow industry growth
- High fixed or storage costs
- Capacity augmented in large increments
- Diverse competitors
- High strategic stakes
- High exit barriers

Substitutes May Become a Threat When:
- Good price performance
- Low switching costs
- Industry is willing to substitute

Source: Adapted from Porter
Competitive Strategy: The Positioning View

- Positioning is based on the external market, industry dynamics, and the structure of the value chain.
Competitive Strategy: The Positioning View

- **Options for firm positioning:**
  - Cost leadership
  - Differentiation

- **And, by focusing on segments**
  - Distinct customer groups
  - Groups with similar needs

- **BUT, assumes operations excellence is not a source of competitive advantage**
Competitive advantage is derived from the firm’s development of unique bundles of resources and capabilities that are:
  – Inimitable: are difficult or costly to imitate or replicate
  – Valuable: allow the firm to improve its market position relative to competitors
  – Rare: in relatively short supply
Competitive Strategy: The Resource-Based View

- **Resource:** an observable, but not necessarily tangible, asset that can be valued and traded
  - e.g., brand, patent, parcel of land, license
  - Asset or input to production than an organization owns, controls or has access to on a semi-permanent basis

- **Capability:** not observable, and hence necessarily intangible, cannot be valued and changes hands only as part of an entire unit
  - Processes, activities or functions performed within a system
  - Utilize the organization's resources
  - Example: How a company innovates
Competitive Strategy: The Resource-Based View

- **Types of capabilities**
  - Process-based
    - e.g., McDonald’s
  - Systems- or coordination-based
    - e.g., Ritz-Carlton
    - e.g., Southwest Airlines
  - Organization-based
    - e.g., Toyota
  - Network-based
    - e.g., Dell and the fulfillment supply chain
    - e.g., Cisco and the technology suppliers
Competitive Strategy: Integrating the Positioning and Resource-Based Views

- Capabilities
  - Process
  - Coordination
  - Organization
  - Network

- Positioning
  - Cost
  - Leadership
  - Differentiation
  - Focus
The process must then involve three levels:

- Corporate
- Business Unit
- Function
...as well as customer goals

- Cost
- Quality
- Availability
- Features/Innovativeness
- Environmental Performance
...yielding an integrated framework
The essence is internal/external and functional fit

External Influences

Industry Forces
- Industry attractiveness
- Competitive structure: opportunities and threats

Strategic Plan: Gaining and Maintaining Competitive Advantage

Goals Objectives
- Capabilities: Sources of strengths/weaknesses

Functional Strategies
- Competitive priorities

Mktg.  Finance  Ops.  R&D

Organization’s “Culture”

But there is a fourth level!
Fourth level: Decision Category Approach

• 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
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
Major Manufacturing Decision Categories

1. FACILITIES
   - size
   - location
   - focus
2. CAPACITY
   - amount
   - timing
   - type
3. VERTICAL INTEGRATION AND SUPPLIER MANAGEMENT (The technology supply chain)
   - direction
   - extent
   - interfaces
   - collaboration
4. PRODUCTION TECHNOLOGIES AND PROCESSES
   - equipment
   - automation
   - interconnectedness
   - scale
   - flexibility
5. WORK FORCE AND MANAGEMENT
   - RFI?
   - Policies (wages, security, etc.)
   - skill levels
6. INFORMATION TECHNOLOGIES
   - use and level of investment
   - parity or differentiation
7. SUPPLY CHAIN AND MATERIALS (The fulfillment supply chain)
   - 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 generation
     - interfaces
     - responsibilities
     - vendor development
   - order fulfillment
   - service and support
   - quality and CI, flexibility, and other cross-cutting capabilities
IT decisions

• How much to invest
• Where to focus investment
• Standardized or customized applications
• Should IT be standardized within the company
  – Standardization allows common learning and implementation advantages
  – But there is less flexibility for local needs
• Organization, implementation and measurement
• Parity or competitive advantage
The strategic mission matches the organization’s strengths to a limited set of external measures of performance

- **Operations Costs**
  - Unit costs
  - Total (volume) costs
  - Lifetime costs
- **Availability**
  - Percentage of on-time shipments
  - Response to results 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
Decision Categories map to 3D concurrent engineering

- **Product**
- **Process**
  - Process technology
  - Capacity
  - Facilities
  - IT
  - Business Processes- PG
- **Supply Chain**
  - Fulfillment SC
  - Materials mgmt
  - Supplier mgmt
  - Vertical integration

**Infrastructure** – HR, organization, IT infrastructure, other business processes
Identify the right measures!
# The Classic Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Technology</th>
<th>Infrastructure</th>
<th>Marketing &amp; Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low unit cost</td>
<td>Specialized equipment</td>
<td>Materials planning and control</td>
<td>Narrow line</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Price</td>
</tr>
<tr>
<td>High service level</td>
<td>Reserve capacity</td>
<td>Inventory</td>
<td>Dependability</td>
</tr>
<tr>
<td>Wide line custom products</td>
<td>Flexible machines</td>
<td>Worker skills</td>
<td>Customer needs and scheduling</td>
</tr>
<tr>
<td></td>
<td>Reserve capacity</td>
<td></td>
<td></td>
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<tr>
<td>Product innovation</td>
<td>General purpose</td>
<td>Development</td>
<td>Market leadership</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team skills</td>
<td>New segments</td>
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</tbody>
</table>
## Present Operations Policies

### Operations Unit

<table>
<thead>
<tr>
<th>Decision Category</th>
<th>Description of Past Policy</th>
<th>Strengths</th>
<th>Weaknesses</th>
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</thead>
<tbody>
<tr>
<td>Production technologies &amp; processes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Capacity</td>
<td></td>
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<tr>
<td>Workforce &amp; management</td>
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Summary of decision category framework

• Understanding of external (value chain, dynamics, competitors, etc.) and internal (capabilities)
• Consistency at four levels (corporation, business, function, and decision category)
• Strategy is pattern of decisions within the nine categories
• Strategy is the identification of the competitive priorities from the five means of competition
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