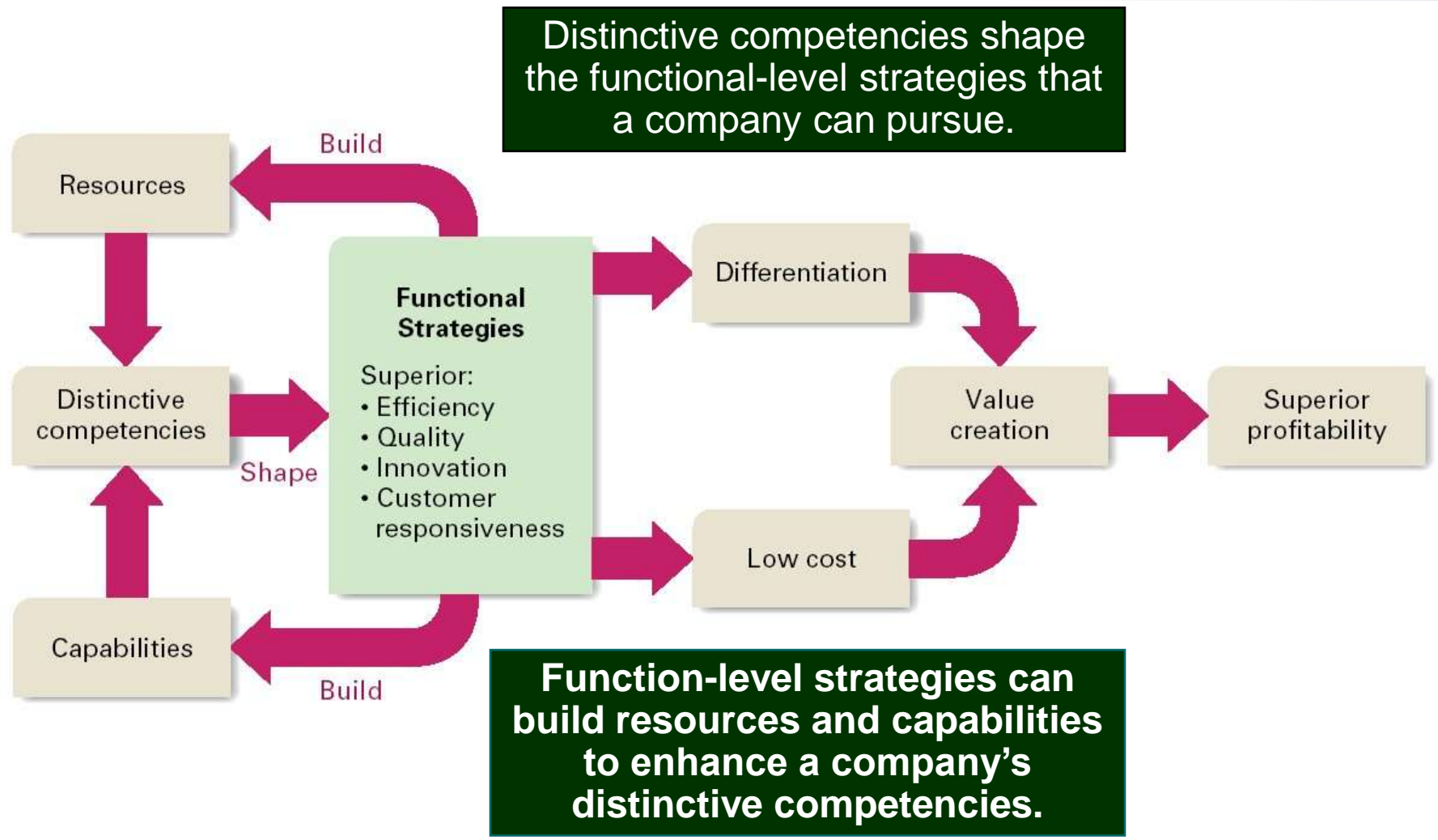
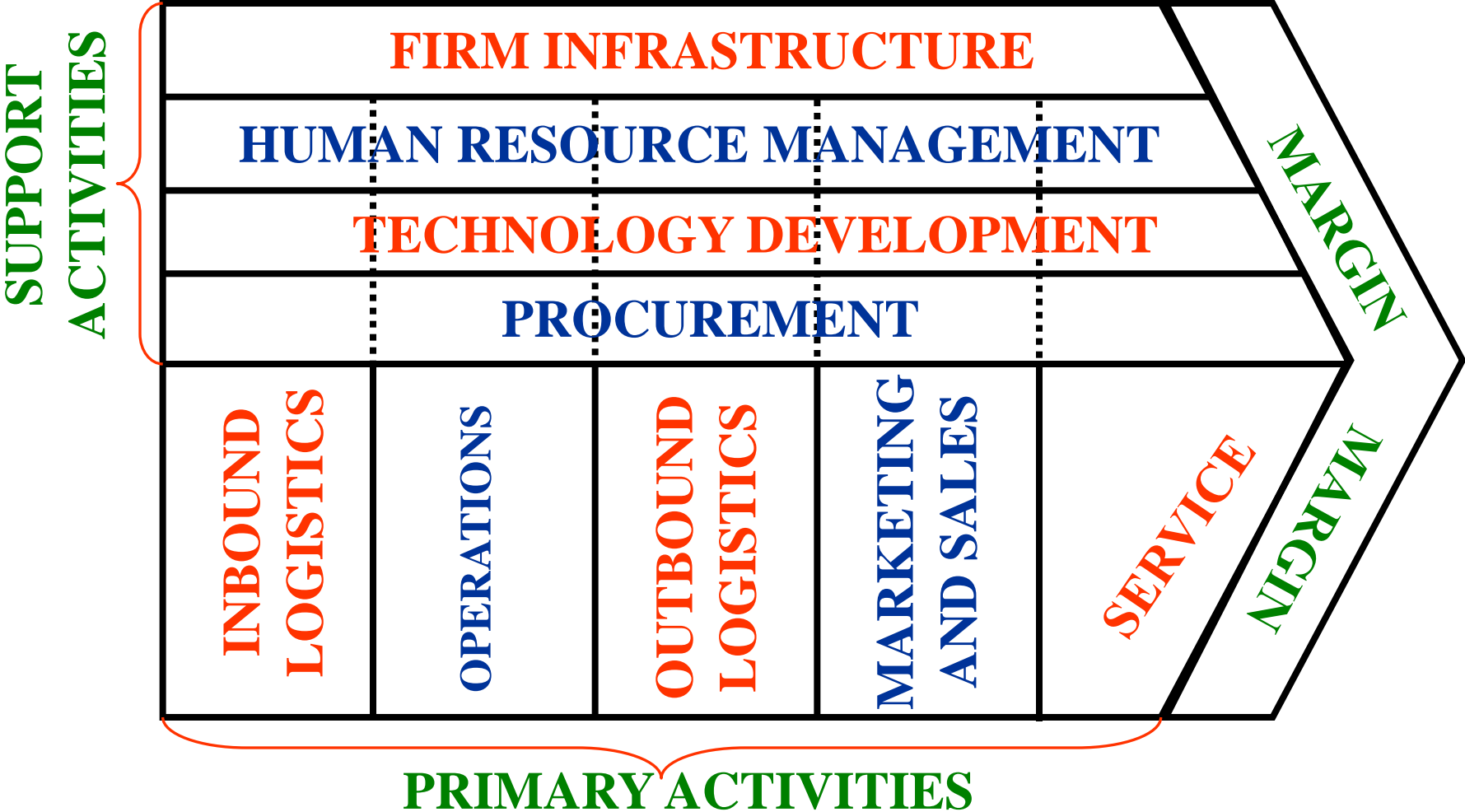




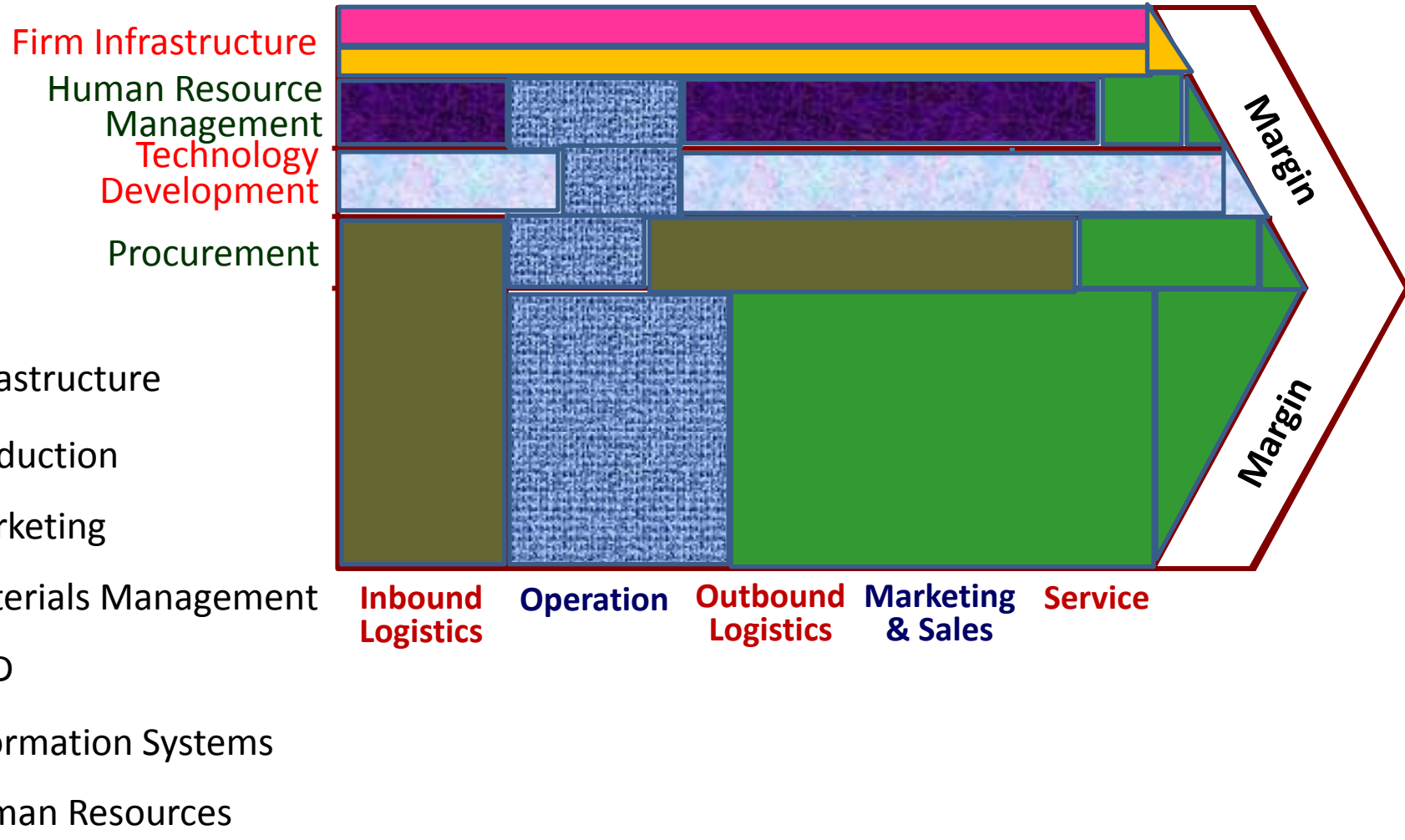
The Roots of Competitive Advantage



From Value Chain to Functions



From Value Chain to Functions



Efficiency: Primary Roles of Value Creation Functions

Value Creation Function	Primary Roles
Infrastructure (leadership)	<ol style="list-style-type: none"> 1. Provide companywide commitment to efficiency. 2. Facilitate cooperation among functions.
Production	<ol style="list-style-type: none"> 1. Where appropriate, pursue economies of scale and learning economics. 2. Implement flexible manufacturing systems.
Marketing	<ol style="list-style-type: none"> 1. Where appropriate, adopt aggressive marketing to ride down the experience curve. 2. Limit customer defection rates by building brand loyalty.
Materials management	<ol style="list-style-type: none"> 1. Implement JIT systems.
R&D	<ol style="list-style-type: none"> 1. Design products for ease of manufacture. 2. Seek process innovations.
Information systems	<ol style="list-style-type: none"> 1. Use information systems to automate processes. 2. Use information systems to reduce costs of coordination.
Human resources	<ol style="list-style-type: none"> 1. Institute training programs to build skills. 2. Implement self-managing teams. 3. Implement pay for performance.



KSOM

Infrastructure:

structure, culture, style of strategic leadership, & control system

- Context within which all other value creation activities take place
- Is especially important in building a companywide commitment to efficiency
- Articulates a vision for all functions and coordinate across functions

Achieving superior performance requires an organization-wide commitment.

Top management plays a major role in this process.



KSOM

Production: Achieving Superior Efficiency

- Economies of scale: When the marginal cost is less than average cost, there are economies of scale
 - Spreading fixed costs over a large production volume ...
Windows Vistas \$5 billion
 - Producing in large volumes to achieve a greater division of labor and specialization ... Ford Model T in 1923 ->\$3, 000 – less than \$900
 - Favorable impact of specialization on productivity by enabling employees to become very skilled at performing a particular task
- Diseconomies of scale
 - Increased bureaucracy associated with large-scale enterprises, Resulting managerial inefficiencies ... NUCOR plants upto 300 people



KSOM

Learning Effects

Learning Effects are cost savings that come from learning by doing.

- Labor productivity

Learn by repetition how to best carry out the task

- Management efficiency

Learn over time how to best run the operation

- Realization of learning effects implies a downward shift of the entire unit cost curve

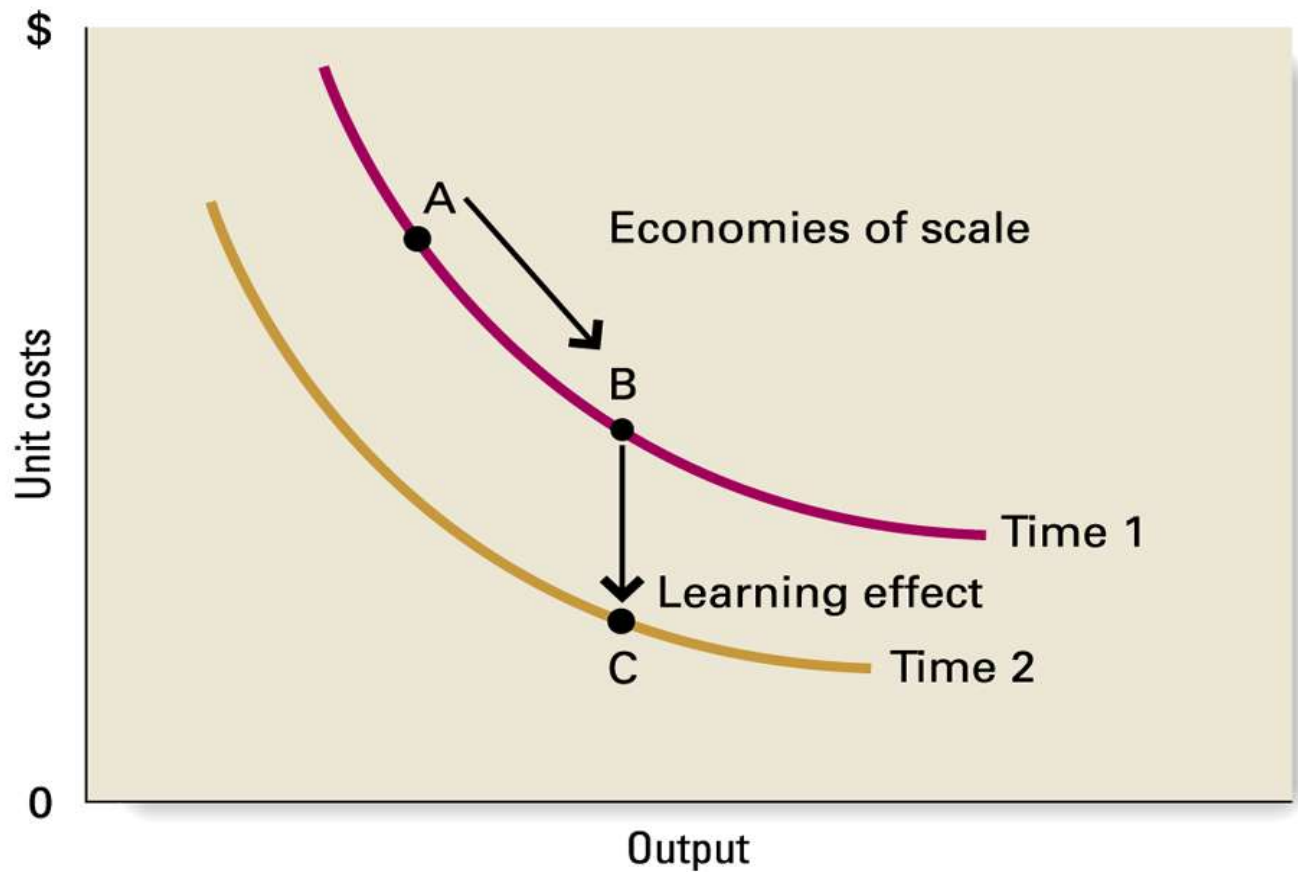
As labor and management become more efficient over time at every level of output

– Learning Effects in Cardiac Surgery



KSOM

The Impact of Learning and Scale Economies on Unit Costs

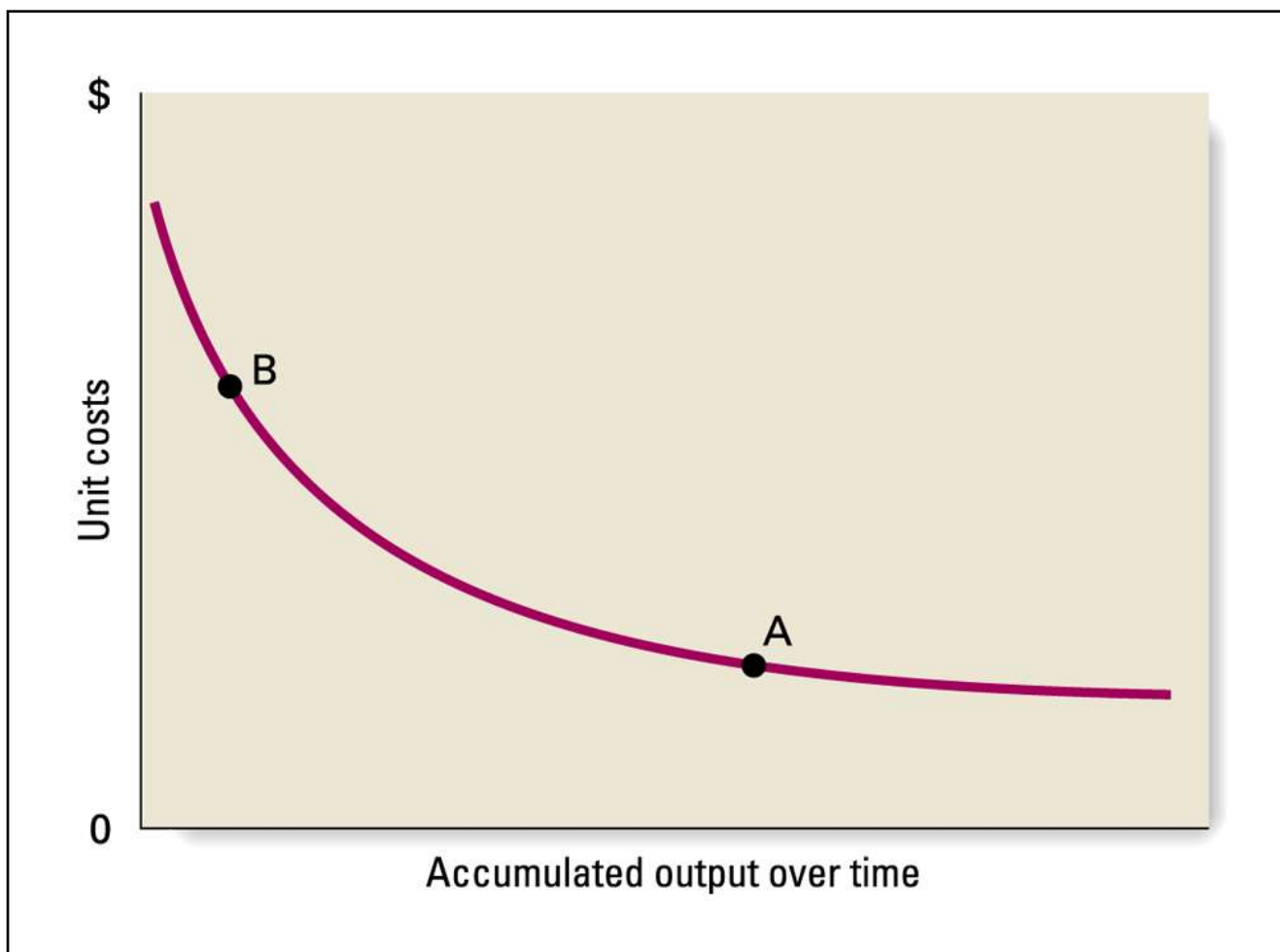




KSOM

Efficiency & the Experience Curve

Pitfalls
Imitation
Technology Change
Difference in Tech

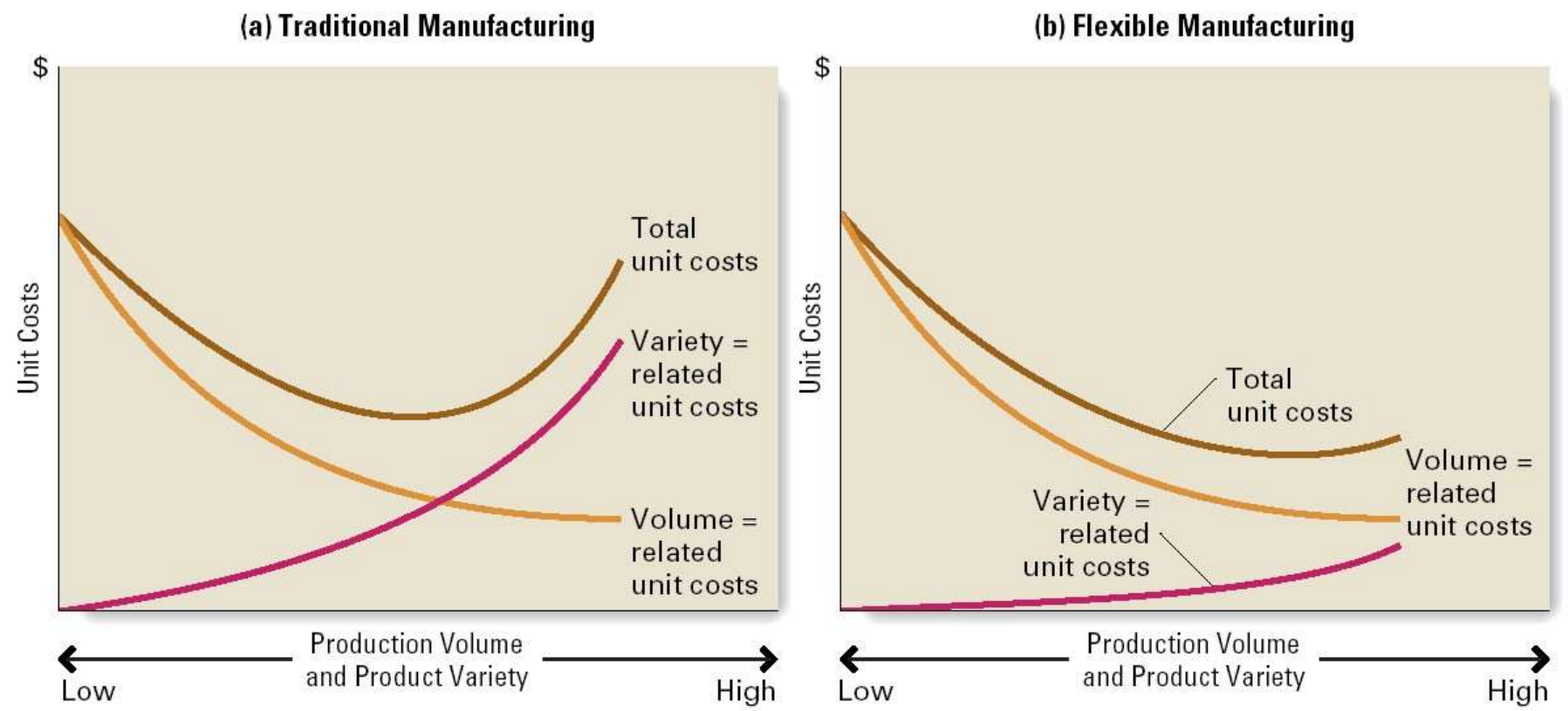




KSOM

Tradeoff Between Costs and Product Variety

Figure 4.5





Flexible Manufacturing and Mass Customization

- **Flexible Manufacturing Technology** - *“Lean Production” technology that:*
 - Reduces setup times for complex equipment
 - Improves scheduling to increase use of individual machines
 - Improves quality control at all stages of the manufacturing process
 - Increases efficiency and lowers unit costs
- **Mass Customization**
Ability to use flexible manufacturing technology to reconcile two goals that were once thought incompatible:
 - Low cost *and*
 - Differentiation through product customization
- **Mass Customization at Lands’ End**

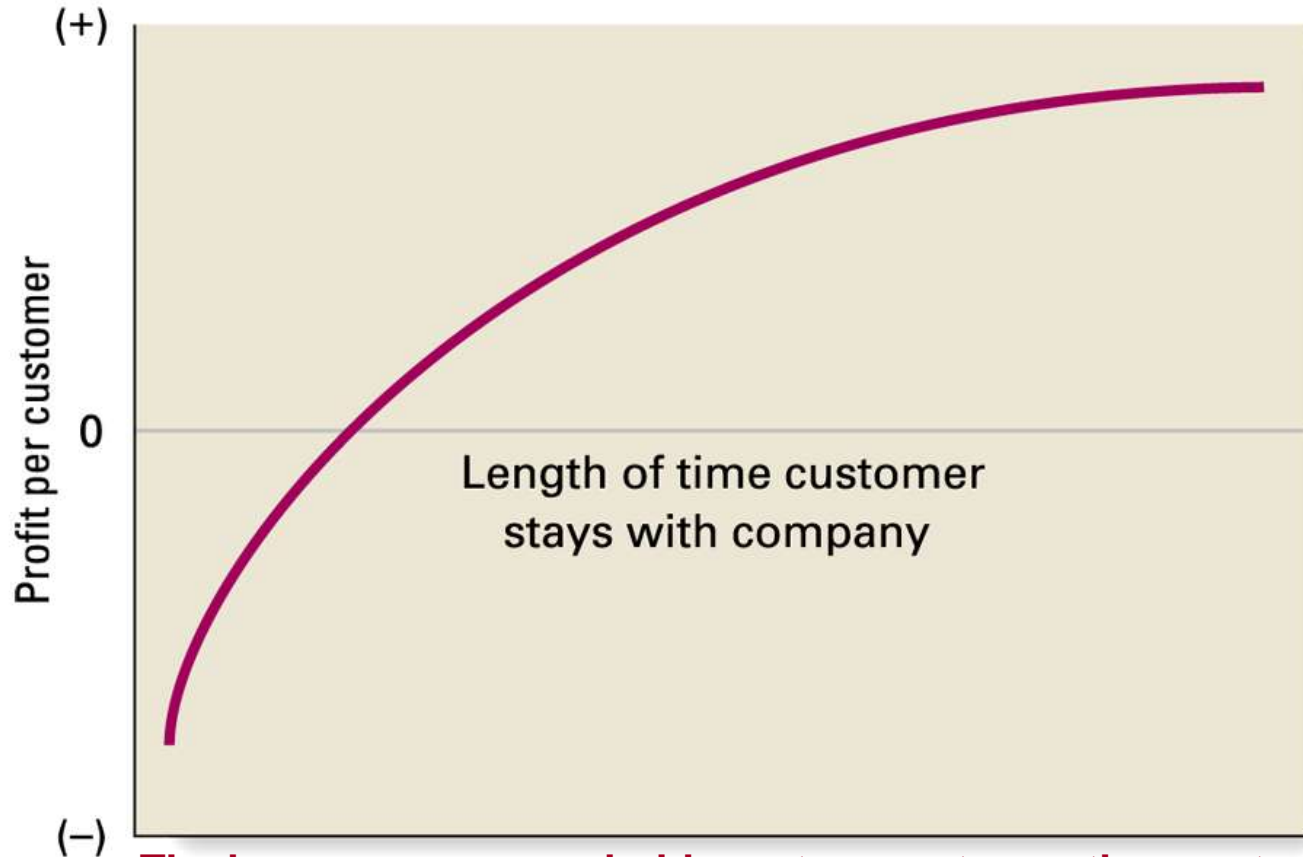


KSOM

Marketing

- Marketing strategy refers to the position that a company takes regarding:
 - Pricing
 - Promotion
 - Advertising
 - Product Design
 - Distribution
- Marketing strategy can reduce costs by lowering customer defection rates and increasing loyalty

The Relationship Between Customer Loyalty and Profit per Customer



The longer a company holds on to a customer the greater the volume of customer-generated unit sales that offset fixed marketing costs and lowers the average cost of each sale.



Materials Management and Supply Chain

- Inbound & outbound logistics
 - Just-in-Time (JIT) Inventory System to economize holding costs:
 - Have components arrive to manufacturing just prior to need in production process
 - Have finished goods arrive at retail just prior to stock out
- Supply Chain Management - the flow of inputs to a company's processes to
 - minimize inventory holding and
 - maximize inventory turnover



R&D Strategy and Efficiency

- Designing products that are easy to manufacture
 - Reduce the number of parts that make up a product – reduces assembly time ... TI, Infra Red Sighting Mechanism
 - Design for manufacturing – requires close coordination with production and R&D
- Help a company have a lower cost structure by pioneering process innovations Lean Manufacturing in Toyota
 - Reduce process setup times
 - Flexible manufacturing
 - An important source of competitive advantage



KSOM

Human Resource Strategy & Efficiency

Goal: to improve employee productivity.

- **Hiring strategy** – *people have the attributes that match the strategic objectives of the company...*
SW Airlines, NUCOR
- **Employee training** - *skills to perform tasks faster and more accurately*
- **Self-managing teams** - *Members coordinate their own activities and make their own hiring, training, work, and reward decisions...GE +250% productivity*
- **Pay for performance** - *Linking pay to individual and team performance can help to increase employee productivity... NUCOR, SW Airlines*

Information Systems & Efficiency

- Information systems' impact on productivity is wide-ranging: ... Cisco, Dell, Bank transfer
 - Web-based information systems can automate many activities
 - Automates interactions between
 - Company and customers
 - Company and suppliers
- Dell's Utilization of the Internet

Quality: Roles Played in Implementing Reliability Improvement Methodologies

Value Creation Function	Primary Roles
Infrastructure (leadership)	<ol style="list-style-type: none"> 1. Provide leadership and commitment to quality. 2. Find ways to measure quality. 3. Set goals, and create incentives. 4. Solicit input from employees. 5. Encourage cooperation among functions.
Production	<ol style="list-style-type: none"> 1. Shorten production runs. 2. Trace defects back to source.
Marketing	<ol style="list-style-type: none"> 1. Focus on the customer. 2. Provide customers' feedback on quality.
Materials management	<ol style="list-style-type: none"> 1. Rationalize suppliers. 2. Help suppliers implement TQM. 3. Trace defects back to suppliers.
R&D	<ol style="list-style-type: none"> 1. Design products that are easy to manufacture.
Information systems	<ol style="list-style-type: none"> 1. Use information systems to monitor defect rates.
Human resources	<ol style="list-style-type: none"> 1. Institute TQM training programs. 2. Organize employees into quality teams.



KSOM

Achieving Superior Quality

❖ 2 dimensions of quality

1. Quality as reliability

They do the jobs they were designed for and do it well

2. Quality as excellence

Perceived by customers to have superior attributes

-
- A strong reputation for quality allows a company to *differentiate* its products.
 - Eliminating defects or errors reduces waste, increases efficiency, and lowers the cost structure – increasing *profitability*.



KSOM

Improving Quality as Reliability

Six Sigma methodology: the principal tool now used to increase reliability, which is a direct descendant of Total Quality Management (TQM)

TQM is based on the following five-step chain reaction:

1. Improved quality means that costs decrease.
2. As a result, productivity also improves.
3. Better quality leads to higher market share and allows increased prices.
4. This increases a company's profitability.
5. Thus the company creates more jobs.

Deming's Steps in a Quality Improvement Program

General Electric's Six Sigma Quality Improvement Process



KSOM

Improving Quality as Excellence

A product is a bundle of attributes and can be differentiated by attributes that collectively define product excellence.

Developing Superior Attributes:

- Learn which attributes are most important to customers
- Design products and associate services to embody the important attributes
- Decide which attributes to promote and how best to position them in consumers' minds ... safety & durability - Volvo
- Continual improvement in attributes and development of new-product attributes



KSOM

Functional Roles for Achieving Superior Innovation

Value Creation Function	Primary Roles
Infrastructure (leadership)	<ol style="list-style-type: none">1. Manage overall project (i.e., manage the development function).2. Facilitate cross-functional cooperation.
Production	<ol style="list-style-type: none">1. Cooperate with R&D on designing products that are easy to manufacture.2. Work with R&D to develop process innovations.
Marketing	<ol style="list-style-type: none">1. Provide market information to R&D.2. Work with R&D to develop new products.
Materials management	No primary responsibility.
R&D	<ol style="list-style-type: none">1. Develop new products and processes.2. Cooperate with other functions, particularly marketing and manufacturing, in the development process.
Information Systems	<ol style="list-style-type: none">1. Use information systems to coordinate cross-functional and cross-company product development work.
Human resources	<ol style="list-style-type: none">1. Hire talented scientists and engineers.

1. Top management must bear primary responsibility for overseeing the whole development process.
2. The effectiveness of R&D in developing new products and processes depends on its ability to cooperate with marketing and production.



KSOM

Achieving Superior Innovation

Building distinctive competencies that result in innovation is the most important source of competitive advantage.

- Innovation can:
 - Result in new products that better satisfy customer needs
 - Improve the quality of existing products
 - Reduce costs
- Innovation can be imitated -
 - ↪ So it must be continuous

Successful new product launches are major drivers of superior profitability.



KSOM

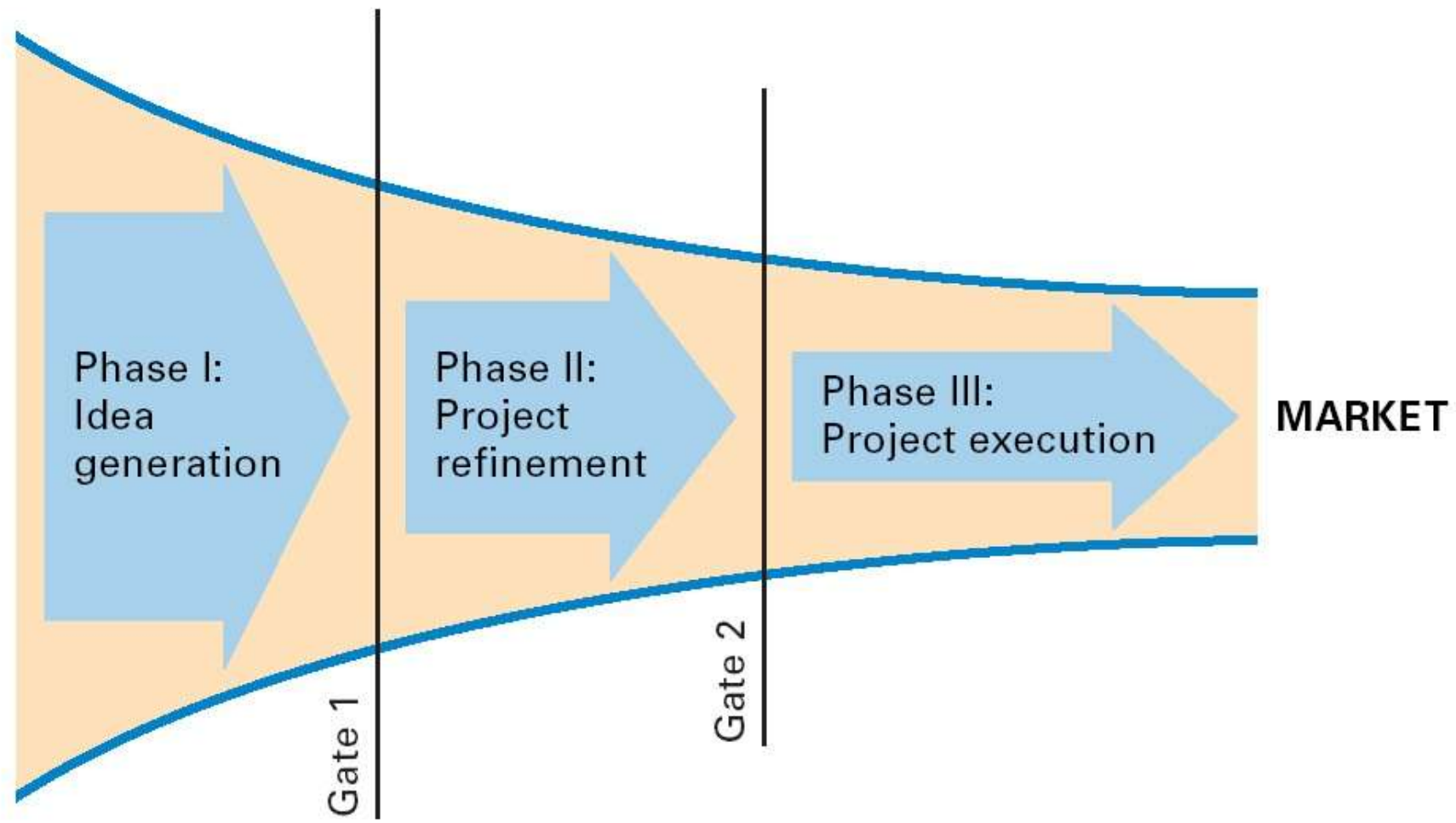
Building Competencies in Innovation

1. Building skills in basic and applied research 3M, Google, HP
2. Project selection and management
Using the product development funnel
3. Achieving cross-functional integration
 1. Driven by customer needs
 2. Design for manufacturing
 3. Track development costs
 4. Minimize time-to-market
 5. Close integration between R&D and marketing
4. Using product development teams
5. Partly-parallel development process



KSOM

The Development Funnel



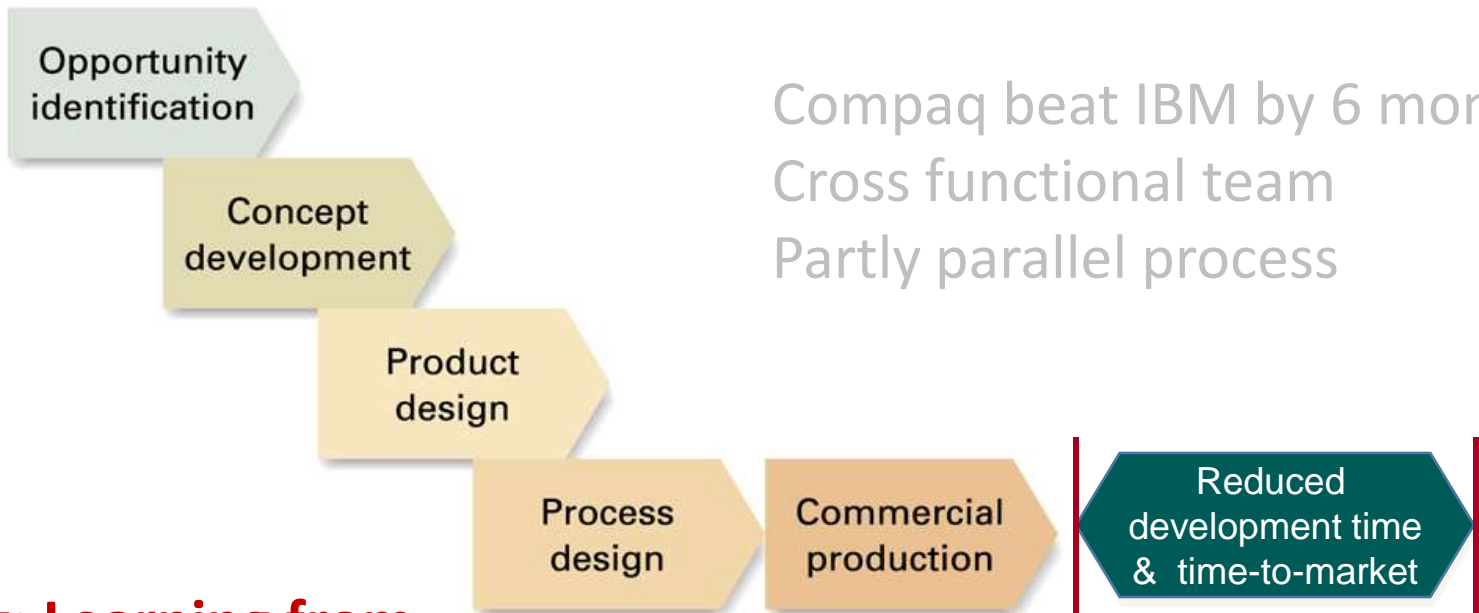


Sequential and Partly Parallel Development Processes

(a) A Sequential Process



(b) A Partly Parallel Process



Compaq beat IBM by 6 months
 Cross functional team
 Partly parallel process

Corning: Learning from Innovation Failures

Primary Roles of Functions in Achieving Superior Responsiveness to Customers

Value Creation Function	Primary Roles
Infrastructure (leadership)	1. Through leadership by example, build a companywide commitment to responsiveness to customers.
Production	1. Achieve customization through implementation of flexible manufacturing. 2. Achieve rapid response through flexible manufacturing.
Marketing	1. Know the customer. 2. Communicate customer feedback to appropriate functions.
Materials management	1. Develop logistics systems capable of responding quickly to unanticipated customer demands (JIT).
R&D	1. Bring customers into the product development process.
Information systems	1. Use web-based information systems to increase responsiveness to customers.
Human resources	1. Develop training programs that get employees to think like customers themselves.



KSOM

Achieving Superior Responsiveness to Customers

- Focusing on the customer
 - Demonstrating leadership Tom Monaghan-Domino's Pizza
 - Shaping employee attitude ... Southwest Airlines
 - Bringing customer into the company... Dell, Land's End
- Satisfying customer needs
 - Customization (Tailor to unique needs of groups of customers) ...113 models of bikes by Honda
 - Response time (increased speed; premium pricing) ..CAT, spare parts in 24 hrs



Relate to Term Paper

- Is your company pursuing any of the
 - efficiency enhancing practices?
 - quality enhancing practices?
 - practices designed to enhance innovation?
 - practices designed to increase responsiveness to customers?
- Evaluate competitive position

Assignment & Presentation

- Resources, capabilities
- Competitor analysis
- Competitive advantage
- Functional strategies