BA 291 Introduction to Business Production Systems

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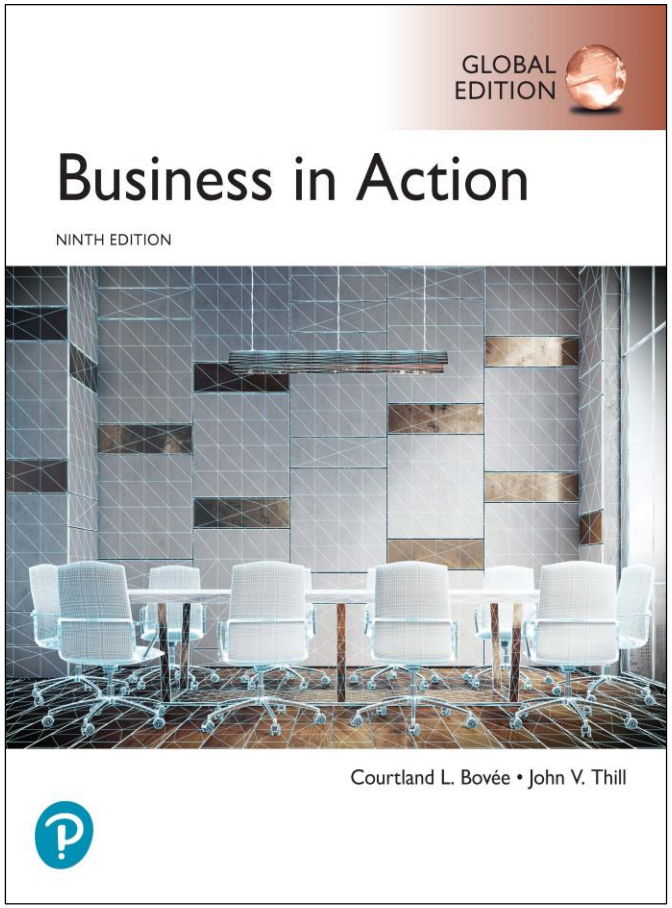
Online Session July 21, 2020

Business in Action: Thriving in the Digital Enterprise

Ninth Edition, Global Edition



Chapter 9

Production Systems

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Learning Objectives (1 of 2)

9.1 Explain the systems perspective, and identify seven principles of systems thinking that can improve your skills as a manager.

9.2 Describe the **value chain** and **value web** concepts, and discuss the controversy over off shoring.

9.3 Define **supply chain** management, and explain its strategic importance.

9.4 Identify the major planning decisions in production and operations management.

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Learning Objectives (2 of 2)

9.5 Explain the unique challenges of service delivery.

9.6 Define **quality**, explain the challenge of quality and product complexity, and identify four major tools and strategies for ensuring product quality.

9.7 Explain the concept of Industry 4.0 and the smart factory.

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The Systems View of Business

- **System**
  - An interconnected and coordinated set of **elements** and **processes** that converts **inputs** to desired outputs

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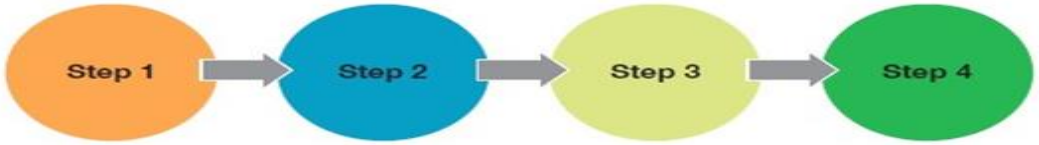
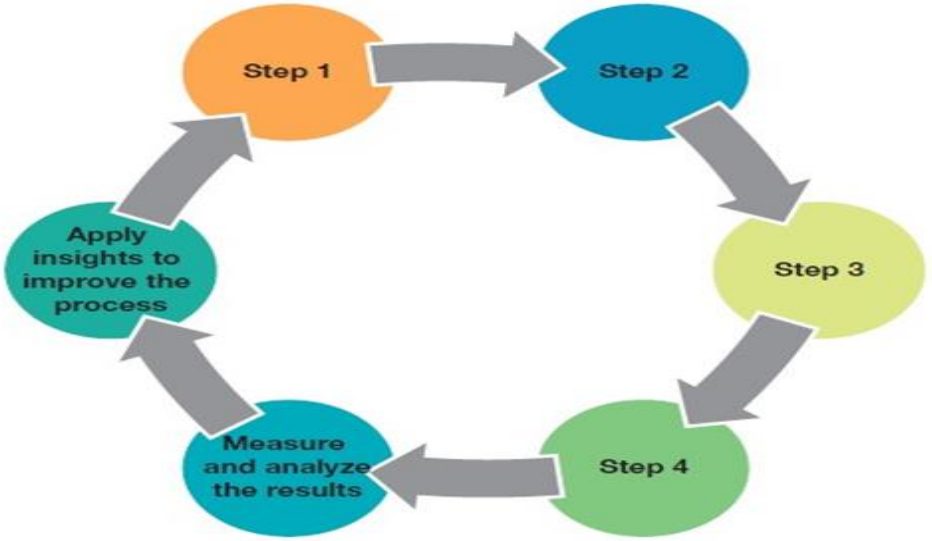
Exhibit 9.1 From Point to Line to Circle: The Systems View

Point view: A single task is completed in isolation.

Line view: A series of related tasks are completed in succession.



Circular view: A series of related tasks are completed in succession, the results of the effort are analyzed, and the insights from that analysis are used to improve the quality and efficiency of the next cycle of the process.



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Managing Systems for Peak Performance (1 of 2)

- Help everyone see the big picture
- Understand how **individual systems** really work and how they **interact**
- Understand problems before you try to **fix** them
- Understand the **potential impact** of solutions before you implement them

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Managing Systems for Peak Performance (2 of 2)

- Don’t just move problems **around—solve them**
- Understand how feedback works in the system
- Use mistakes as **opportunities** to learn and improve

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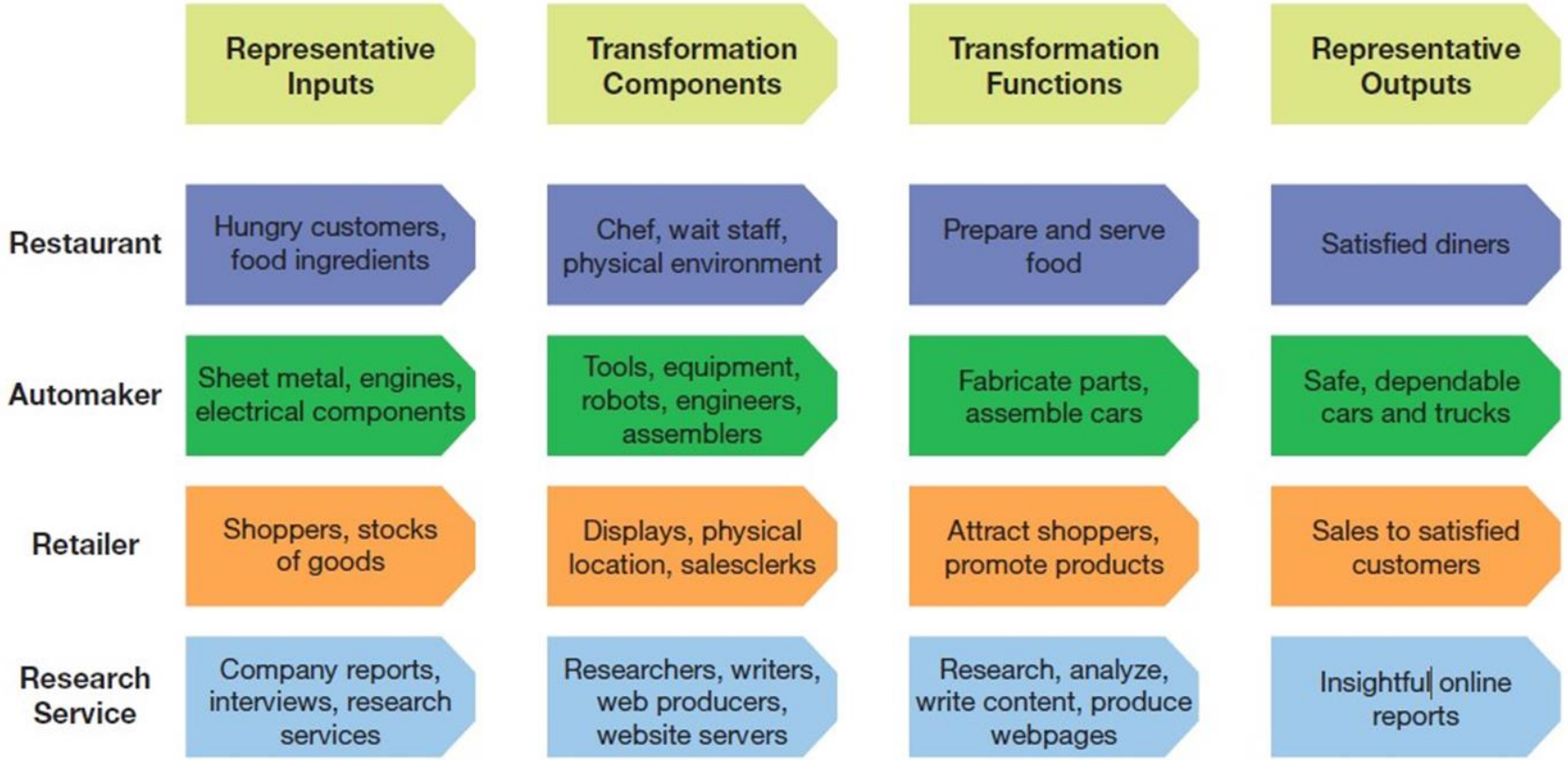
Exhibit 9.2 Business Transformation Systems



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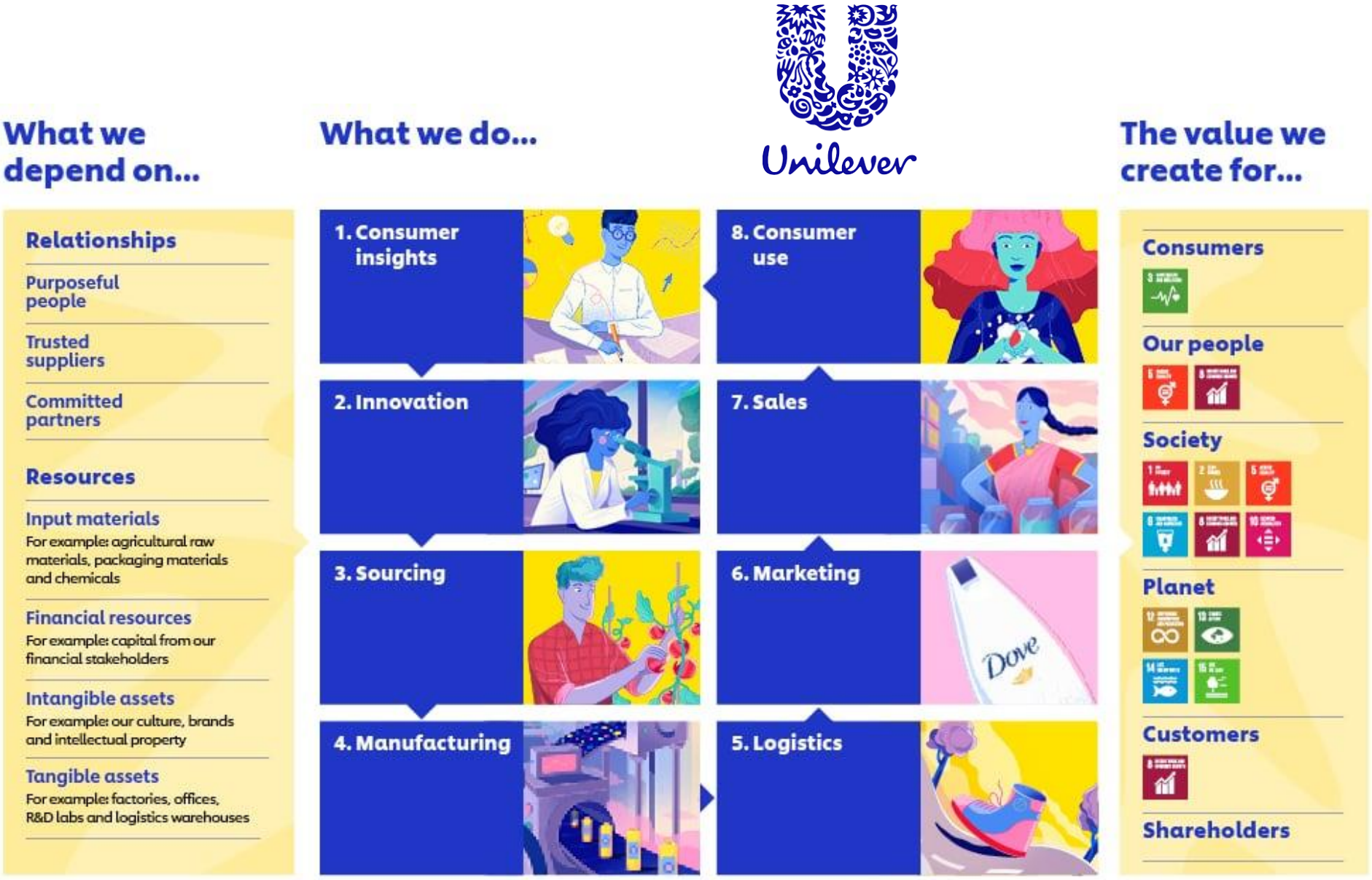

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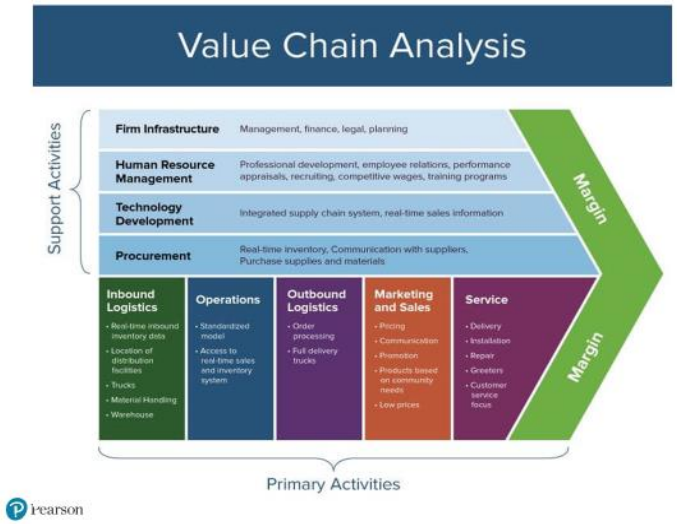
Value Chains and Value Webs

- **Value chain**
  - All the elements and processes that add value as raw materials are transformed into the final products made available to the ultimate customer



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Redefining Organizations with Value Webs

- **Outsourcing**
  - Contracting out certain business functions or operations to other companies
- **Value webs**
  - Multidimensional networks of suppliers and outsourcing partners

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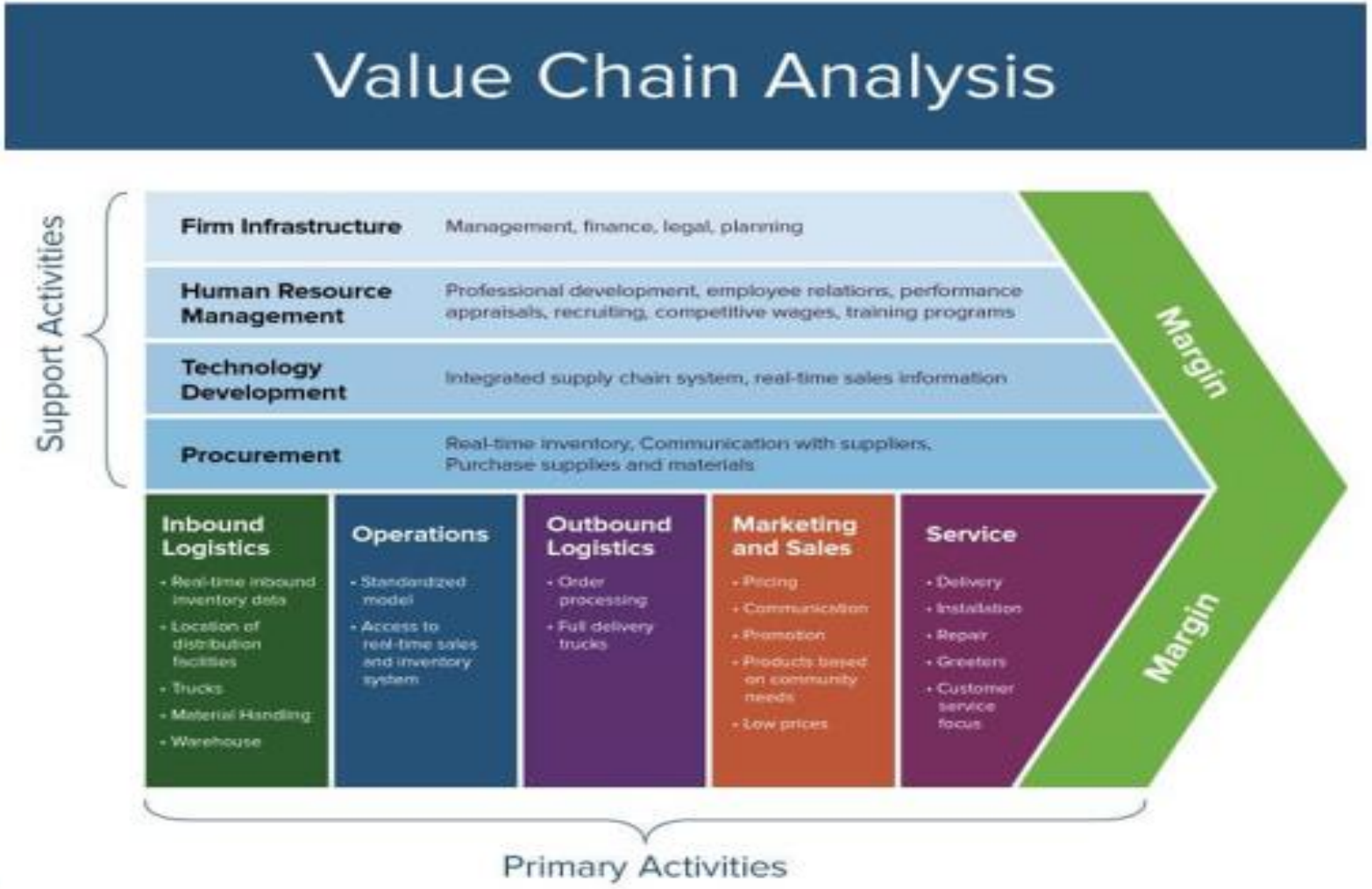
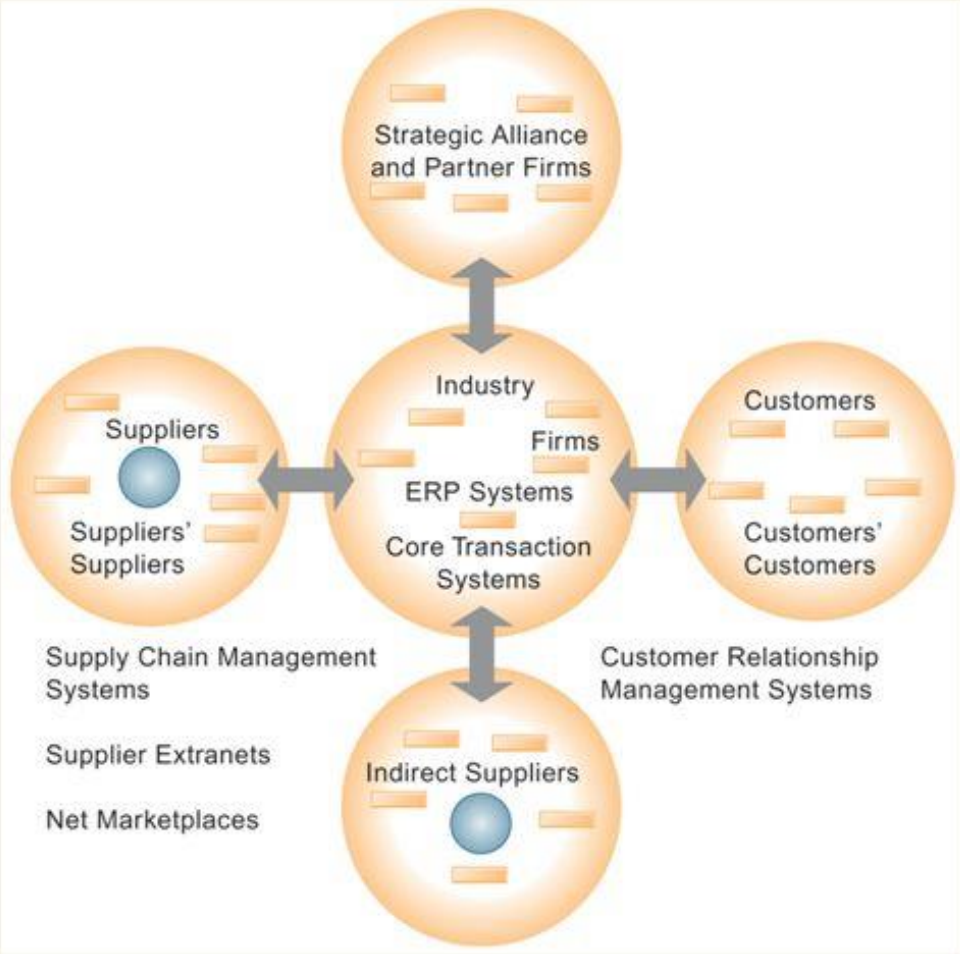
Value Chains and Value Webs



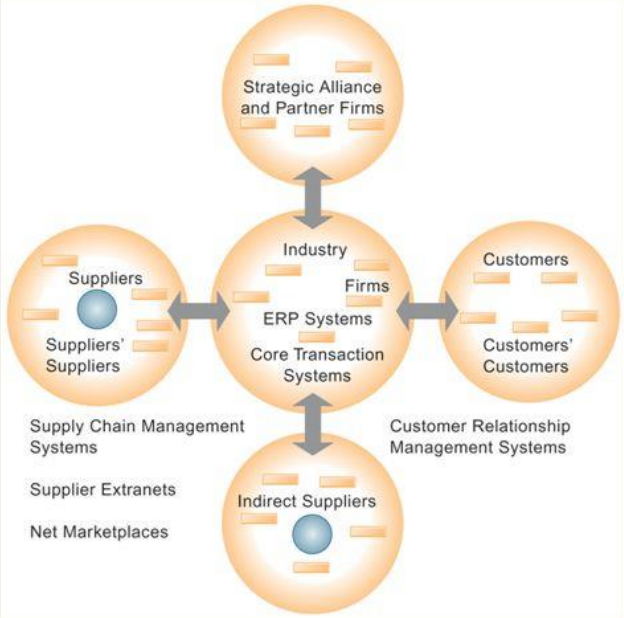
THE VALUE WEB



- Collection of independent firms using highly synchronized IT to coordinate value chains to produce product or service collectively
- More customer driven, less linear operation than traditional value chain

Enterprise resource planning (ERP)
A planning system that addresses the needs of the entire organization, from manufacturing to sales to human resources

THE VALUE WEB



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The Offshoring Controversy

- **Offshoring**
  - Transferring a part or all of a business function to a facility (a different part of the company or another company entirely) in another country

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Nike: Offshore Production

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Supply Chain Management (1 of 2)

- **Supply chain**
  - A set of connected systems that coordinates the flow of goods and materials from suppliers all the way through to final customers

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Supply Chain Management (2 of 2)

- **Supply chain management (SCM)**
  - The business procedures, policies, and computer systems that integrate the various elements of the supply chain into a cohesive system

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Supply Chain

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TOGETHER WITH SUPPLIERS AND PARTNERS WE HAVE PROVIDED HELP AND TRAINING TO **570,000** SMALLHOLDER FARMERS

WE CONTINUOUSLY LOOK AT MORE SUPPLY CHAINS TO HAVE POSITIVE SOCIAL AND ECONOMIC IMPACT ON SMALLHOLDERS

We are either directly in business with smallholder farmers or via suppliers in the examples here

- We have been directly involved in agronomic support activities targeted at the farmers
- We have contributed cash to programmes of farmer training
- We pay for technical solutions that create environmental savings and yield improvements
- We pay premiums to suppliers for investment in farmer replanting/agronomy programmes
- We have provided planting material (high yielding seed) to farmers
- We have provided resource directly to a project of farmer training
- We link expert organisations to our suppliers/farmers to build, for example, pest management programmes

TOMATOES FROM INDIA

As a result of a partnership between the Maharashtra government and Hindustan Unilever, a woman entrepreneur was able to invest in a tomato processing plant, contracting supplies which contributed to high-quality tomatoes for our Kissan Ketchup brand from

2,600 SMALLHOLDER FARMERS

OVER **500,000** FARMERS HAVE BEEN TRAINED OR ENGAGED IN **AFRICA**

VANILLA FROM MADAGASCAR

Working with Symrise and international NGO GIZ to deliver livelihood improvement for farmers. This impacts 4,000 smallholders and families, 32 vanilla communities and 44 schools and colleges

24,000 PEOPLE

WORKING WITH TEA FARMERS

An agreement with the Tanzanian government, aims to positively impact the local community in Mufindi through the development of

6,000 HECTARES OF SMALLHOLDER TEA FARMS

The Kenya Tea Development Agency (KTDA) launched a new phase of its Sustainable Agri-culture Programme to see 96,000 farmers trained by 2015

Unilever and Vodafone technology connects smallholder farmers directly on agronomical best practices to ultimately improve livelihoods. And Lipton continues to inform consumers about this

PALM OIL FROM INDONESIA

A close cooperation between smallholders, the RSPO and WWF achieved the first certified oil palm small-holders from Indonesia to comply with the sustainable oil palm management standard

763 HECTARES OF PLANTATIONS

BLACK SOY BEANS FROM INDONESIA

Working with farmers to develop a high-quality sustainable supply for Bango sauce. In 2000, we started working with a local university to engage local farmers, providing technical assistance and financing to help them improve productivity and boost incomes

7,000 FARMERS ENGAGED IN THE PROGRAMME

Unilever

Find out more at www.unilever.com/sustainable-living-2014/enhancing-livelihoods/

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Strategic Impact of SCM

- Managing risks
- Managing relationships
- Managing trade-off
- Promoting sustainability

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Supply Chain Systems and Methods (1 of 3)

- **Inventory**
  - Goods and materials kept in stock for production or sale
- **Inventory control**
  - Determining the right quantities of supplies and products to have on hand and tracking where those items are

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Supply Chain Systems and Methods (2 of 3)

- **Procurement**
  - The acquisition of the raw materials, parts, components, supplies, and finished products required to produce goods and services
- **Material requirements planning (MRP)**
  - A planning system that works backward from a company's sales forecasts to make sure it has enough of everything required to build those goods or perform those services in a timely manner

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SELECT SUPPLIER

DEVELOP APPROACH	TARGET SUPPLIERS	GO-TO-MARKET	EVALUATE RESPONSES	NEGOTIATION & AWARD
• Capabilities • Time • Quality • Service • Cost • Reliability • Capacity • Ethical • Culture • Order process • Suitability • Responsible sourcing • Observance to UL supplier code	• Existing suppliers • Past suppliers • Market research • Supply market knowledge • Different supply markets • Consider substitutes • Determine whether pre-screened suppliers can meet all the criteria	• Include all information suppliers need to present their best case, including: • Confidentiality req's • Timeframe • Evaluation criteria • Specifications • Performance req's • Historical volumes • Pricing details • Financial statements • Historical volumes • Pricing details • Financial statements	• Evaluation criteria will include (may be weighted): • Service • Capability • Quality • Lead time • Cost • Score & select short list of suppliers for negotiations • Invite short-listed suppliers for negotiations	• Prepare negotiation strategy: • Review all items that will have an influence on the outcome • Agree negotiation team & assigned roles • Prepare negotiation strategy • Once supplier(s) have been chosen, final contracts can be prepared. Suppliers should have signed up to the UL terms & conditions, or at the least highlighted areas of concern

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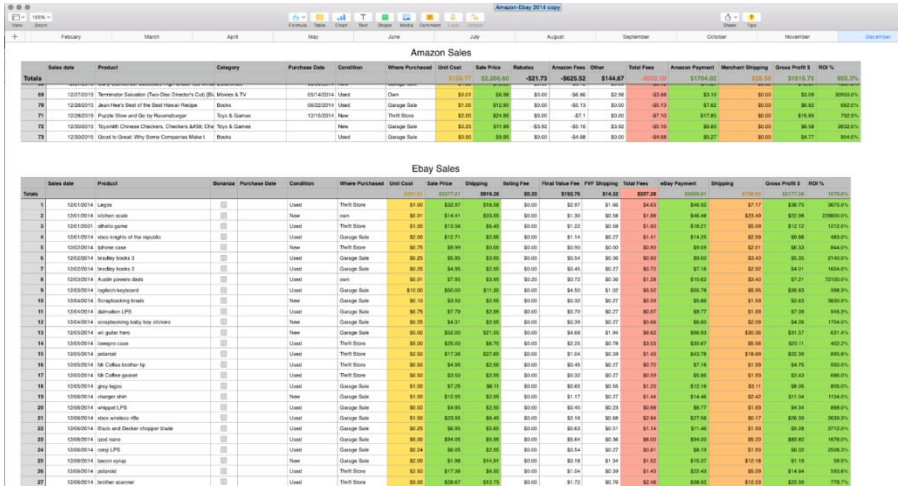
Logistics Network - Spreadsheets

Current Task Status / Priority	High	Medium	Low	Total	% Of Total
Closed	1	0	2	3	13%
Work In Progress	2	4	1	7	30%
Behind	4	1	0	5	22%
Not Started	4	1	3	8	35%
Total	11	6	6	23	100%
% of Total	48%	26%	26%	100%	

ID	Issue Description	Department	Actual Status	Priority
1	Application Design	IT	Not Started	Low
2	Application Development	IT	Work In Progress	High
3	Application Testing	IT	Closed	Low
4	Deploy	IT	Not Started	High
5	Enviroment Design	Marketing	Work In Progress	Medium
6	Enviroment Implementation	Marketing	Closed	Low
7	Enviroment Testing	Operations	Behind	High
8	Process Design	Operations	Work In Progress	Medium
9	Operational Setup	Operations	Behind	High
10	Implementation	Operations	Work In Progress	Medium
11	Product Launch	Marketing	Behind	Medium
12	R&D	Marketing	Work In Progress	High
13	Product Design	Marketing	Behind	High
14	Marketing Collateral	Marketing	Closed	High
15	Press Release	Marketing	Behind	High
16	Operation Issue 1	Operations	Not Started	High
17	Operation Issue 2	Operations	Not Started	Low
18	IT Issue 1	IT	Work In Progress	Medium
19	IT Issue 2	IT	Not Started	High
20	IT Issue 3	IT	Not Started	Medium
21	Marketing Issue 1	Marketing	Work In Progress	Low
22	Marketing Issue 2	Marketing	Not Started	High
23	Marketing Issue 3	Marketing	Not Started	Low

0,1 Low	0,3 Medium	0,6 High
0,00%	5,00%	21,82%
1,67%	20,00%	10,91%
3,33%	0,00%	5,45%
5,00%	5,00%	21,82%



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Supply Chain Systems and Methods (3 of 3)

- **Manufacturing requirements planning (MRP)**
  - A planning system that works backward from a company's sales forecasts to make sure it has enough of everything required to build those goods or perform those services in a timely manner
- **Enterprise resource planning (ERP)**
  - A planning system that addresses the needs of the entire organization, from manufacturing to sales to human resources

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Production and Operations Management (1 of 3)

- **Production and operations management**
  - Overseeing all the activities involved in producing goods and services

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Production and Operations Management (2 of 3)

- Facilities location and design
- Forecasting and capacity planning
- Scheduling
- Lean systems

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Stages of the Capacity Planning Process

Made for PowerPoint

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Production and Operations Management (3 of 3)

- **Capacity planning**
  - Establishing the overall level of resources needed to meet customer demand
- **Critical path**
  - In a PERT network diagram, the sequence of operations that requires the longest time to complete

The Program Evaluation Review Technique, or **PERT**, is a visual tool used in project planning. Using the technique helps project planners identify start and end dates, as well as interim required tasks and timelines. The information is displayed as a network in chart form.

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Exhibit 9.4 Simplified PERT Diagram for a Store Opening

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Lean Systems (1 of 2)

- **Productivity**
  - The efficiency with which an organization can convert inputs to outputs
- **Lean systems**
  - Systems (in manufacturing and other functional areas) that maximize productivity by reducing waste and delays

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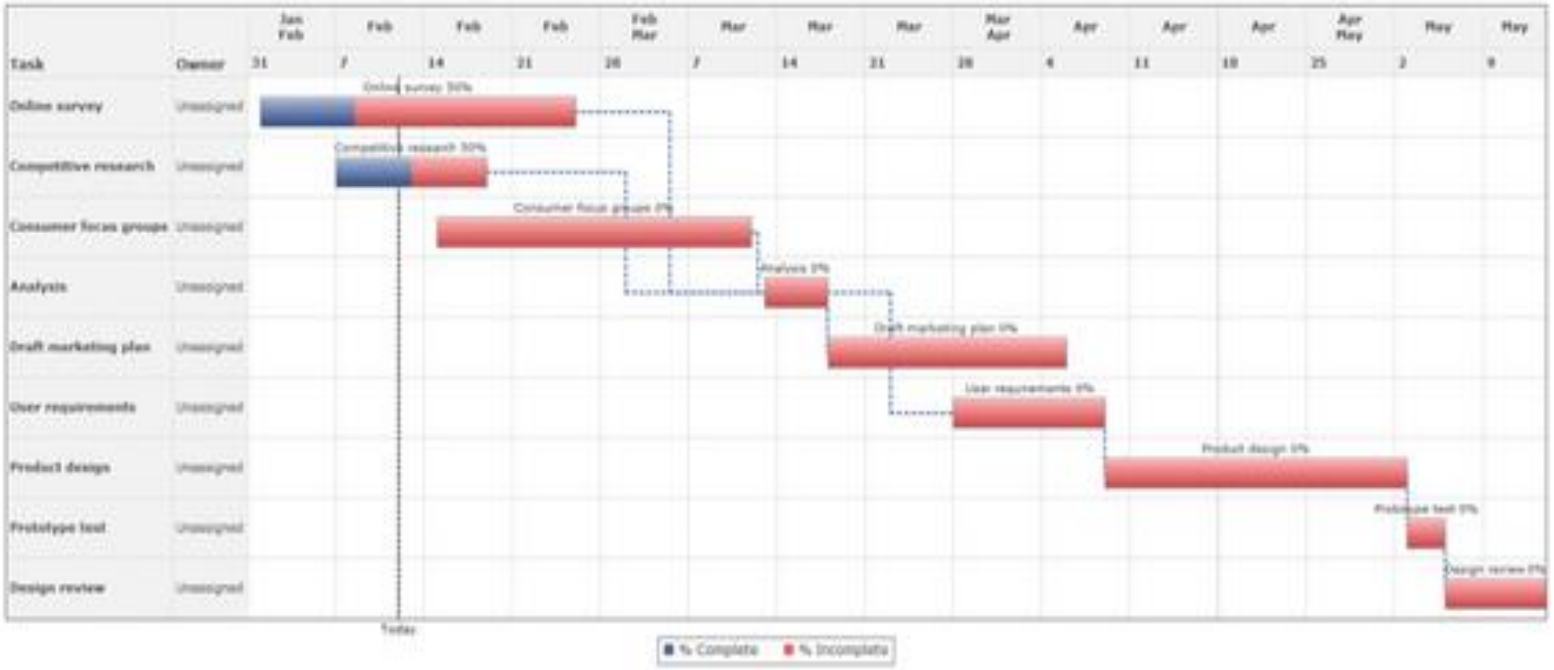
Exhibit 9.3 Gantt Chart



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Lean Systems (2 of 2)

- **Just-in-time (JIT)**
  - Inventory management in which goods and materials are delivered throughout the production process right before they are needed

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Mass Production, Customized Production, and Mass Customization (1 of 2)

- **Mass production**
  - The creation of identical goods or services, usually in large quantities
- **Customized production**
  - The creation of a unique good or service for each customer

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Mass Production, Customized Production, and Mass Customization (2 of 2)

- **Mass customization**
  - A manufacturing approach in which part of the product is mass produced and the remaining features are customized for each buyer

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The Unique Challenges of Service Delivery

- Perishability
- Location constraints
- Scalability challenges
- Performance variability and perceptions of quality
- Customer involvement
- Service provider interaction

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Product and Process Quality (1 of 4)

- **Quality**
  - The degree to which a product or process meets reasonable or agreed-on expectations
- **Quality control**
  - Measuring quality against established standards after the good or service has been produced and weeding out any defective products

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Product and Process Quality (2 of 4)

- **Quality assurance**
  - A more comprehensive approach of companywide policies, practices, and procedures to ensure that every product meets quality standards
- **Total quality management**
  - An approach to quality assurance that encompasses every aspect of a company's operations

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Product and Process Quality (3 of 4)

- **Statistical process control (SPC)**
  - The use of random sampling and tools such as control charts to monitor the production process
- **Six sigma**
  - A rigorous quality management program that strives to eliminate deviations between the actual and desired performance of a business system

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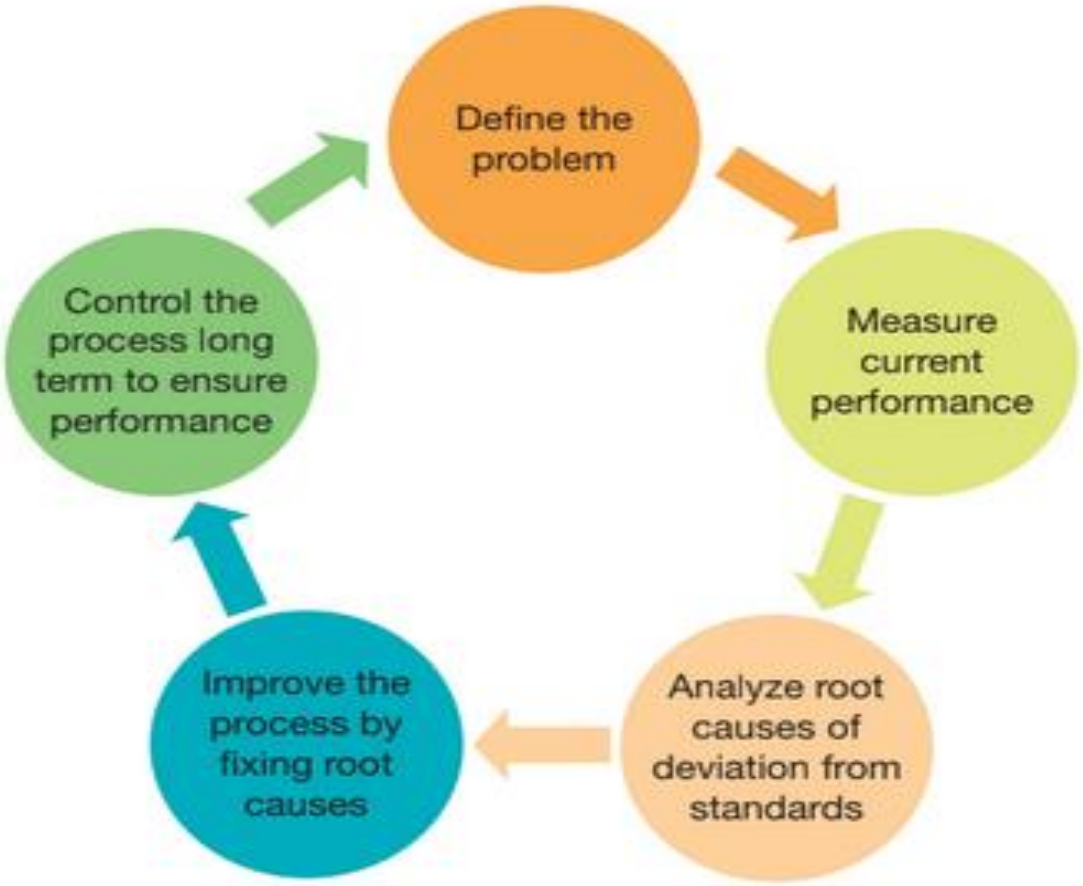
Exhibit 9.5 The DMAIC Process in Six Sigma Quality Management



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Product and Process Quality (4 of 4)

- **ISO 9000**
  - A globally recognized family of standards for quality management systems

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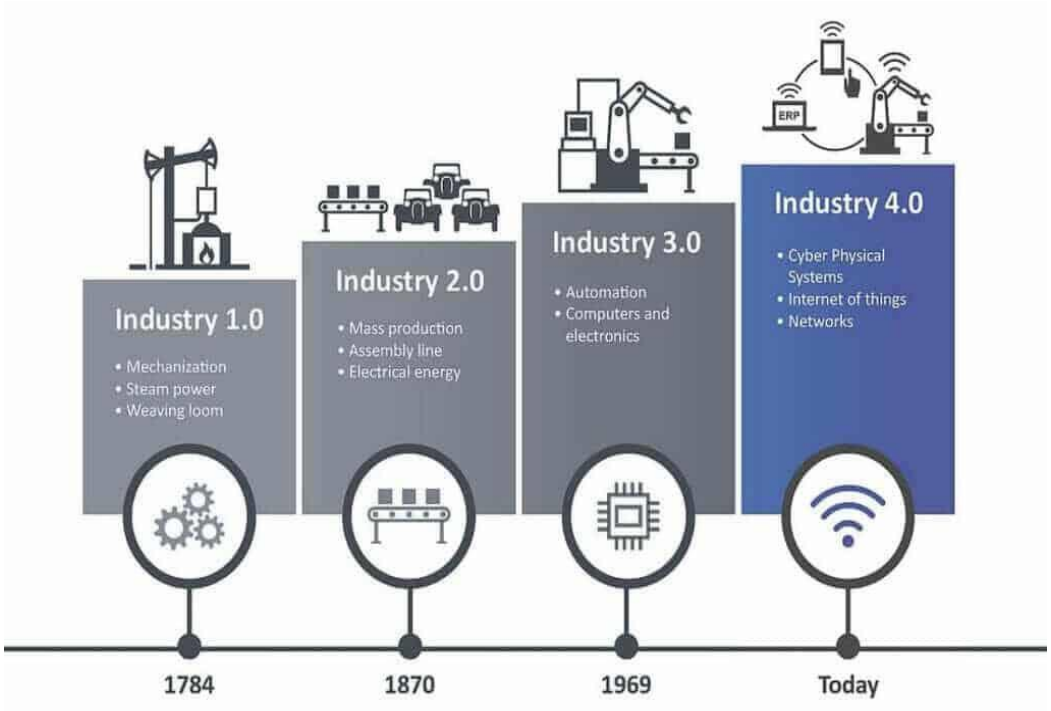
Thriving in the Digital Enterprise: Industry 4.0 and the Smart Factory

- **Industry 4.0**
  - The digital transformation of manufacturing, moving from automated factories to smart factories that emphasize the use of cyber-physical systems



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Applying What You've Learned (1 of 2)

1. Explain the systems perspective, and identify seven principles of systems thinking that can improve your skills as a manager.
2. Describe the value chain and value web concepts, and discuss the controversy over off shoring.
3. Define supply chain management, and explain its strategic importance.
4. Identify the major planning decisions in production and operations management.

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Applying What You've Learned (2 of 2)

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