Information Technology and Changing Business Processes

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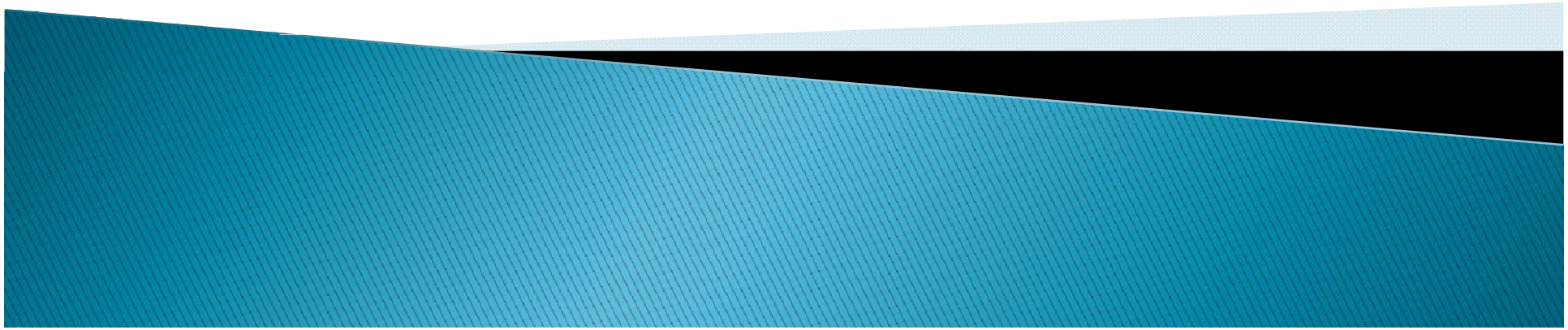

OUTLINE

- Learning objectives
- Silo perspective vs. business process perspective
- The tools for change
- Shared services
- Enterprise systems
- Integrated supply chains
- Summary

Learning Objectives

- List how IT enables business change
- Identify ways in which IT can impede business change
- Understand the problems that are caused by the functional (silo) perspective of business
- Identify how the process perspective keeps the big picture in view and how IT can be used to facilitate this perspective
- Define TQM and BPR and explain how they are used to transform business
- Explain an enterprise system and how they are used to implement organizational change

SILO PERSPECTIVE
VS.
BUSINESS PROCESS PERSPECTIVE

Silo (Functional) Perspective

- The silo perspective views the business as discrete functions (accounting, sales, production, etc.)
  - Figure 5.1 shows a traditional organizational chart which is how a functional business is organized
- Each functional area determines its core competencies and focuses on what it does best
- Advantages:
  - Allows optimization of expertise
  - Group like functions together for learning
- Disadvantages:
  - Significant sub-optimization
  - Tend to lose sight of overall organizational objectives

Typical Hierarchical Organization Structure

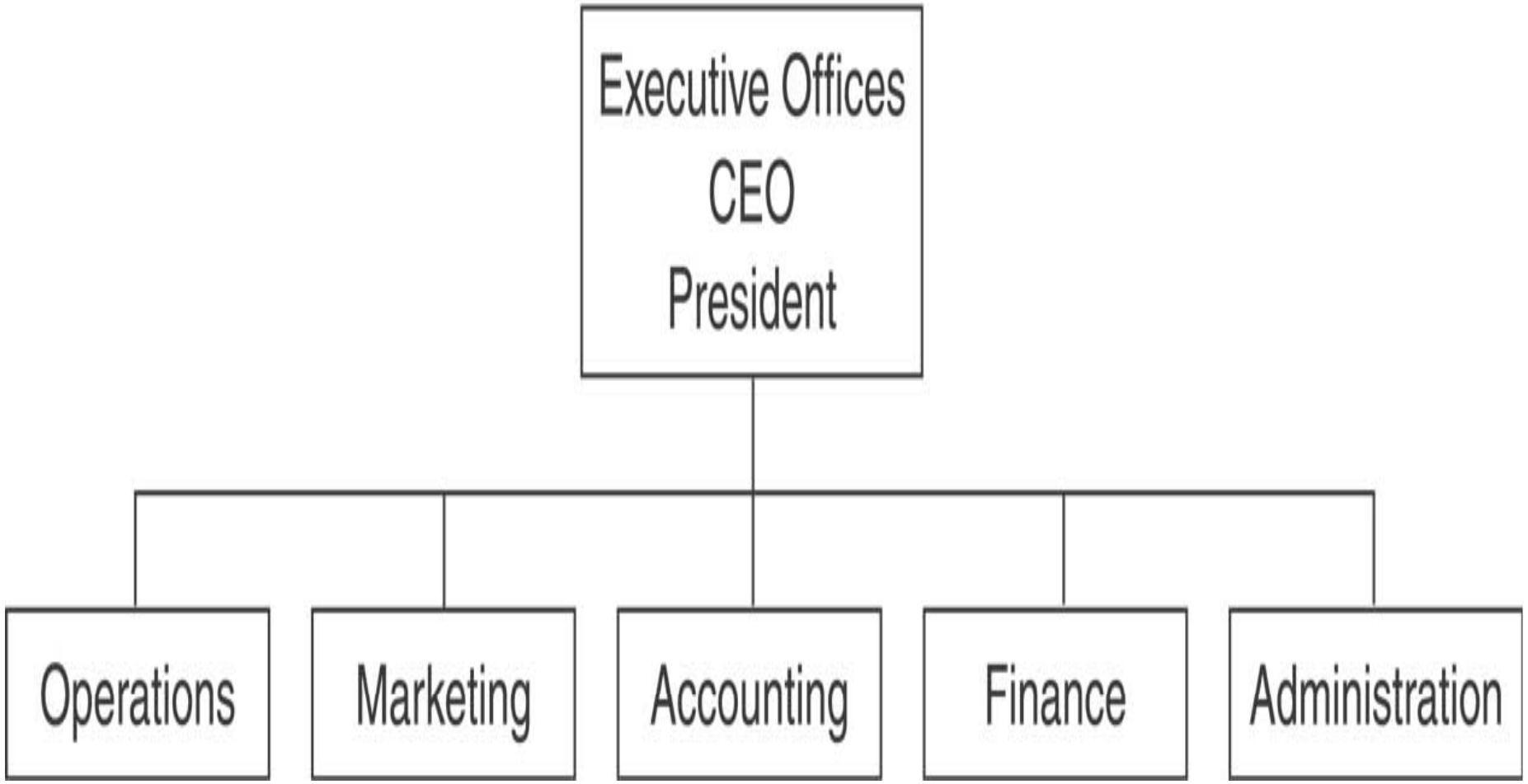

Figure 5.1 Hierarchical Structure

Process Perspective

- Keeps the big picture in view
- Focuses on work being done to create optimal value for the business
- **Process** is defined as an interrelated, sequential set of activities and tasks that turns inputs into outputs, and includes the following:
  - A beginning and an end
  - Inputs and outputs
  - A set of tasks (sub-processes) that transform the inputs into outputs
  - A set of metrics for measuring effectiveness

Process Perspective

- Examples of business processes include:
  - customer order fulfillment
  - manufacturing, planning and execution
  - payroll
  - financial reporting
  - procurement (see figure 5.2)

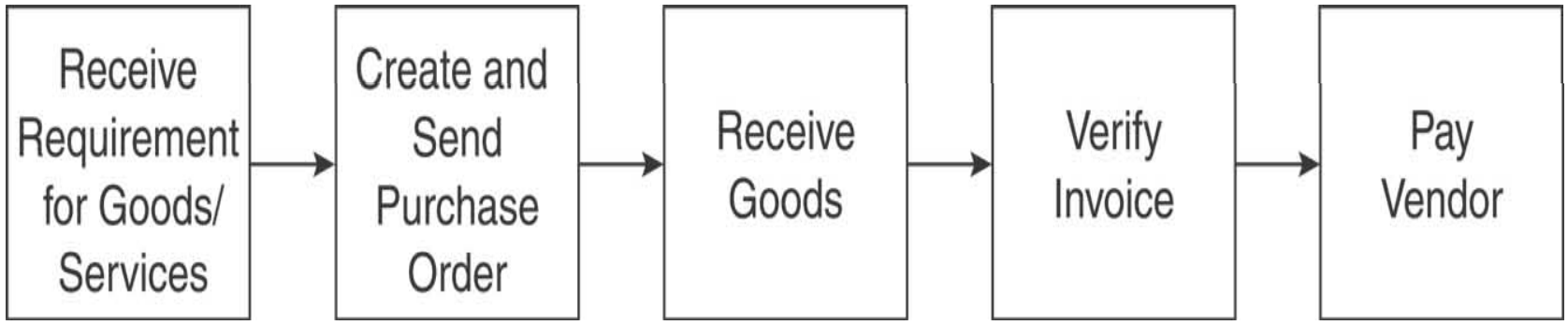

Figure 5.2 – Sample business process

Process Perspective

- Advantages:
  - Helps avoid or reduce duplicate work
  - Facilitate cross-functional communication
  - Optimize business processes
- Figure 5.3 shows the cross-functional view of processes as they cross departments (functions)

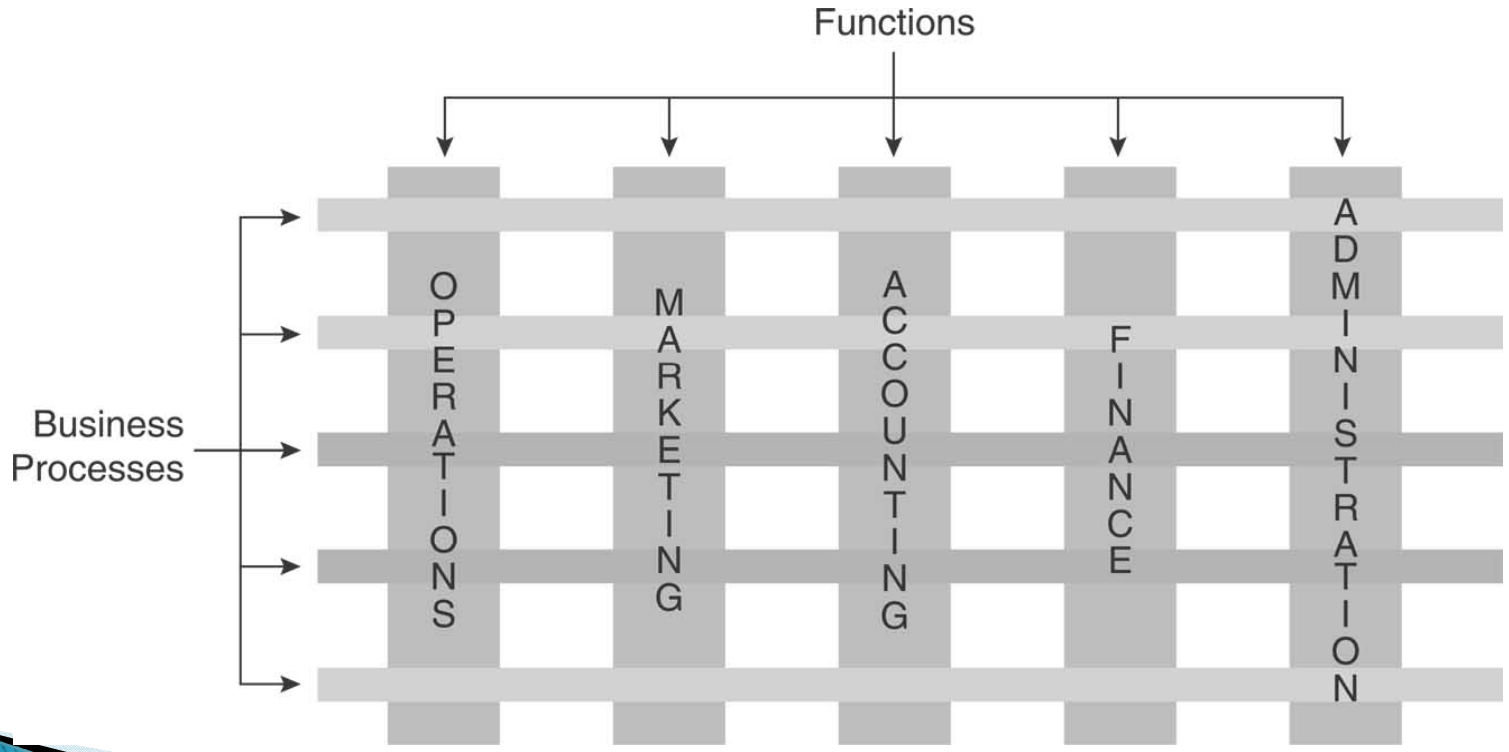

Figure 5.3 Cross-functional nature of business processes

Process Perspective

- When managers gain the process perspective they begin to lead their organizations to change
  - Question status quo
  - Don't accept "because we have always done it that way" as an answer to why business is done in a particular way
  - Allows managers to analyze business's processes in light of larger goals
- Zara is a good example of a process perspective business (see chapter 2 & p.140)

Comparison of Silo Perspective and Business Process Perspective

	Silo Perspective	Business Process Perspective
Definition	Self-contained functional units such as marketing, operations, finance, and so on	Interrelated, sequential set of activities and tasks that turns inputs into outputs
Focus	Functional	Cross-functional
Goal Accomplishment	Optimizes on functional goals, which might be a suboptimal organizational goal.	Optimizes on organizational goals, or “big picture”
Benefits	Highlighting and developing core competencies; Functional efficiencies	Avoiding work duplication and cross-functional communication gaps; organizational effectiveness

THE TOOLS FOR CHANGE

Incremental Change

- Total Quality Management (TQM) is a tool for change that uses small incremental changes
- Personnel often react favorably to TQM
- Greater personnel control and ownership
- Change is viewed as less of a threat
- Six-Sigma is one popular approach to TQM

Six Sigma

- Six Sigma asserts that:
  - Continuous efforts to achieve stable and predictable process results are of vital importance to business success
  - Manufacturing and business processes have characteristics that can be measured, analyzed, improved and controlled
  - Achieving sustained quality improvement requires commitment from the entire organization, particularly from top-level management
- It seeks to eliminate defects from any process

Radical Change

- Business Process Reengineering (BPR) is a more "radical" change management tool
- Attain aggressive improvement goals
- Goal is to make a rapid, breakthrough impact on key metrics
- Figure 5.6 shows the difference over time of the radical (BPR) and incremental (TQM) approaches to change
- Greater resistance by personnel
- Use only when major change is needed

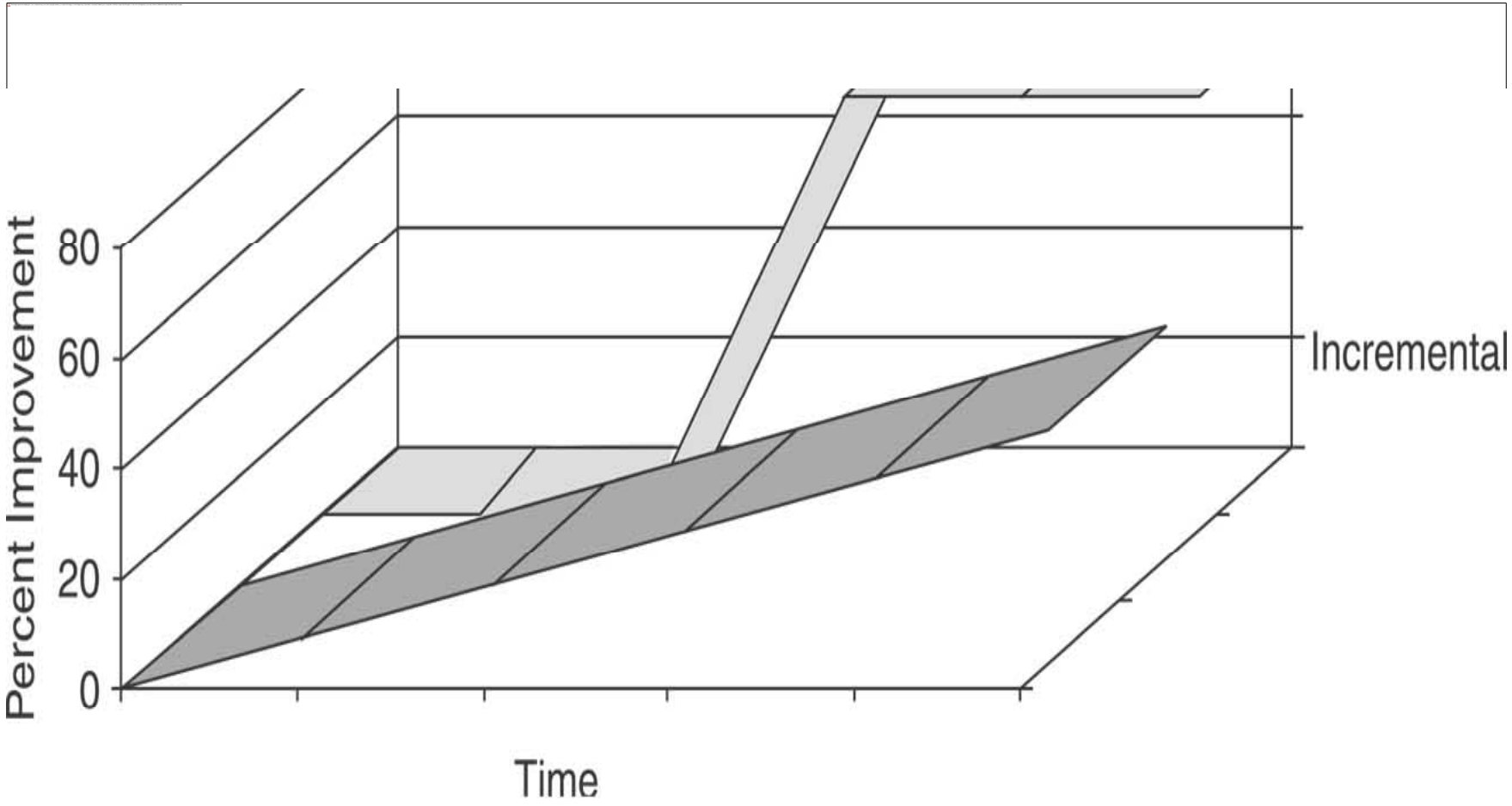

Figure 5.5 Comparison of radical and incremental improvement

The Process for Radical Redesign

- The different approaches for radical redesign all include:
  - Begin with a vision of which performance metrics best reflect the success of overall business strategy
  - Make changes to the existing process
  - Measure the results using the predetermined metrics
- Figure 5.6 illustrates a general view of radical design
- Figure 5.7 illustrates a method for redesigning a business process
- Tool used to understand a business process is a workflow diagram

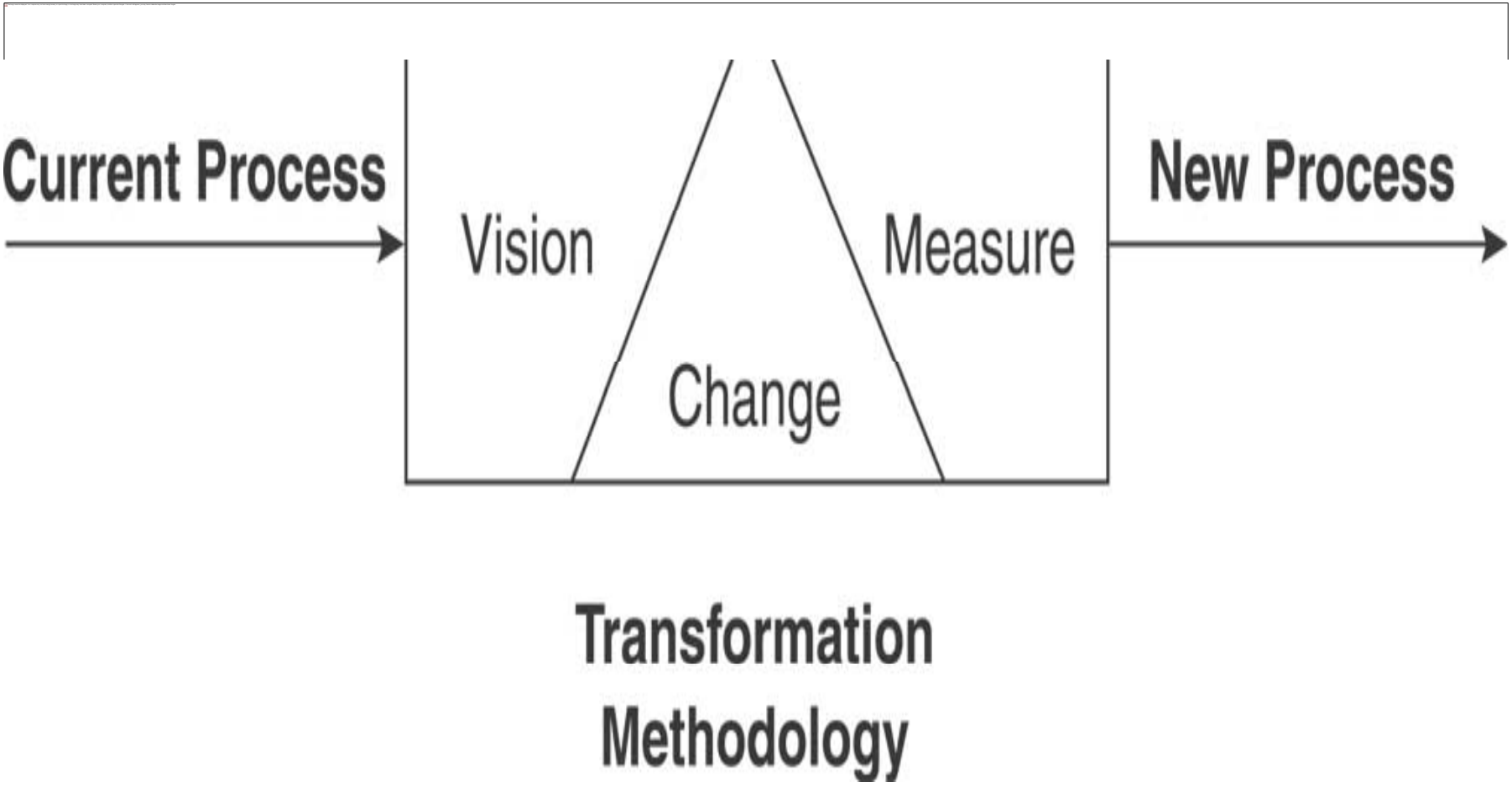

Figure 5.6 – Conceptual flow of process design

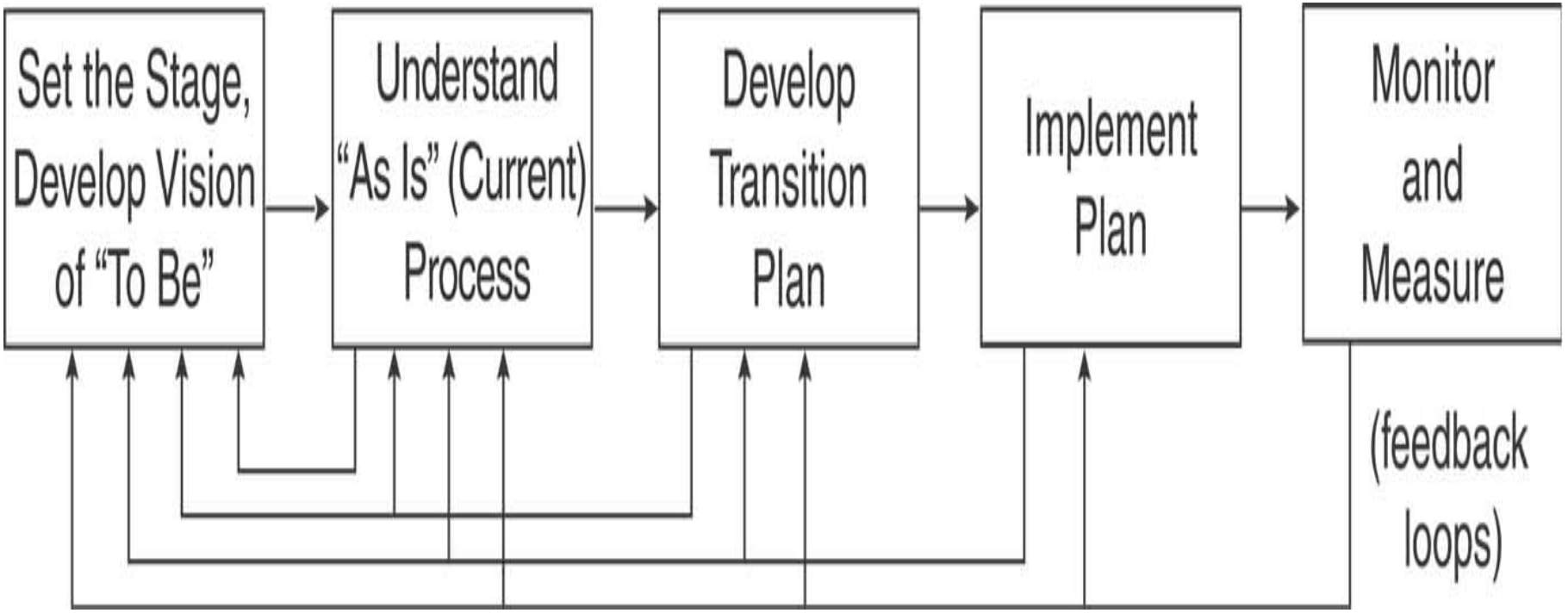

Figure 5.7 – Method for redesigning a business process

Risks of Radical Redesign

- Lack of senior management support at the right time & places
- Lack of a coherent communications program
- Introducing unnecessary complexity into the new process design
- Underestimating the amount of effort needed to redesign and implement the new processes
- Combining reengineering with downsizing

Agile Processes

- *Agile* processes are processes that iterate through a constant renewal cycle of design, deliver, evaluate, redesign, and so on
- Ultimate goal for some are agile processes that reconfigure themselves as they 'learn'
- For a process to be agile, it necessitates a high degree of use of IT
- Processes that run entirely on the Internet are candidates for becoming agile processes

SHARED SERVICES

Shared Services

- *Horizontal integration* – term for looking beyond individual business processes and considering the bigger, cross functional picture of the corporation
  - Integrated databases, web 2.0 technologies and services, and common infrastructure are the tools IT brings to the implementation of horizontal integration

- Many organizations have restructured their common business processes into a **shared services** model

Business Process Management (BPM) Systems

- In the 1990s, a class of systems emerged to help manage workflows in the business
  - They primarily helped track document-based processes where people executed the steps of the workflow
- They go way beyond the document-management capabilities, including features that manage person-to-person process steps, system-to-system steps, and those processes that include a combination
  - Systems include process modeling, simulation, code generation, process execution, monitoring, and integration capabilities for both company-based and web-based systems
  - The tools allow an organization to actively manage and improve its processes from beginning to end

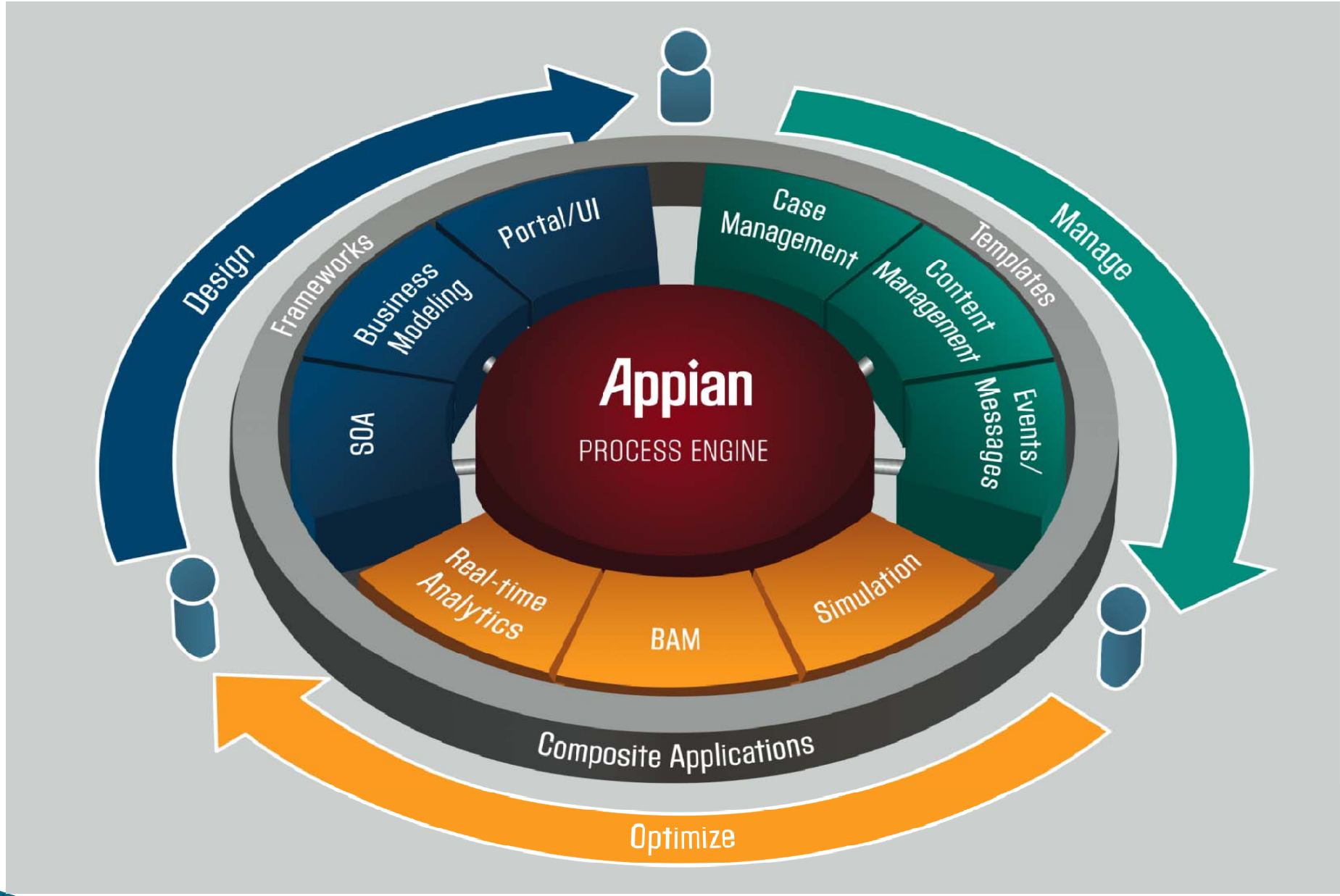

FIGURE 5.8 Sample BPM Architecture: Appian Enterprise

ENTERPRISE SYSTEMS

Enterprise Systems

- A set of information systems tools used to enable information flow within and between processes
- Enterprise systems are comprehensive software packages
- ERP (Enterprise Resource Planning) software packages are the most frequently discussed type of enterprise systems
- Designed to manage the potentially hundreds of systems throughout a large organization
- SAP is the most widely used ERP software package

Characteristics of Enterprise Systems

- Integration – seamlessly integrate information flows throughout the company
- Packages – they are commercial packages purchased from software vendors (like SAP, Oracle, Peoplesoft, etc.)
- Best practices – reflect industry best practices for BP
- Some assembly required – the systems need to be integrated with the existing hardware, OS's, databases, and telecommunications
- Evolving – the systems continue to change to fit the needs of the diverse marketplace

Benefits and Disadvantages of Enterprise Systems

- Benefits:
  - All modules easily communicate together
  - Useful tools for centralizing operations and decision making
  - Can reinforce the use of standard procedures
- Disadvantages:
  - Implementation is an enormous amount of work
  - Most require some level of redesigning business processes
  - Hefty price tag (sold as a suite)
  - They are risky

The Adoption Decision

- Sometimes it is appropriate to let the enterprise system drive business process redesign
  - When just starting out
  - When organizational processes not relied upon for strategic advantage
  - When current systems are in crisis

- Sometimes it is inappropriate to let the enterprise system drive business process redesign
  - When changing an organization's processes that are relied upon for strategic advantage
  - When the package does not fit the organization
  - When there is a lack of top management support

INTEGRATED SUPPLY CHAINS

Integrated Supply Chains

- Processes linked across companies
- Supply chain begins with raw materials and ends with a product/service
- Globalization of business and ubiquity of communication networks permits use of suppliers from anywhere
- Requires coordination among partners of the integrated supply chain

Integrated Supply Chain

- Challenges include:
  - Information integration
  - Synchronized planning
  - Workflow coordination
- Leads to new business models
  - For example when banks link up to businesses new financial services are offered such as on-line payments
  - Companies list needs and vendors electronically bid to be the supplier

FOOD FOR THOUGHT:
IS ERP A UNIVERSAL SOLUTION?: CROSS-CULTURAL BUSINESS PROCESSES

- Major vendors, SAP and Oracle, show a western bias in reporting best practices
- Due to problems encountered, businesses in non-western companies/locations are turning to local vendors
- If the system is based on a cultural model that conflicts with the local customs and which can not easily be accommodated by the ERP it should NOT be implemented

Summary

- Learning objectives
- Silo perspective vs. business process perspective
- The tools for change
- Shared services
- Enterprise systems
- Integrated supply chains

- Next lecture: What are the components of an IT architecture?