HOW BUSINESSES USE INFORMATION SYSTEMS

HOW BUSINESSES USE INFORMATION SYSTEMS

- A business is a formal organization that makes products or provides a service in order to make a profit.

Organizing a business: business functions and entities

- There are four basic business functions: manufacturing and production, sales and marketing, finance and accounting, and human resources
- There are five basic business entities: suppliers, customers, employees, invoices/payments, and products and services.

HOW BUSINESSES USE INFORMATION SYSTEMS

Business processes:

- Manner in which work is organized, coordinated, and focused to produce a valuable product or service
- Concrete work flows of material, information, and knowledge—sets of activities
- Business processes also refer to unique ways to coordinate work, information, and knowledge
- Information systems help organizations achieve great efficiencies by automating parts of processes

HOW BUSINESSES USE INFORMATION SYSTEMS

Information Systems also contributes to completely rethinking processes i.e. .

•Change flow of information

•Replace sequential steps with parallel steps

•Eliminate delays in decision making

Business processes typically span several different functional areas.

Examples of Business Processes

•Manufacturing and production:

- Assembling product, checking quality, producing bills of materials

•Sales and marketing:

-Identifying customers, creating customer awareness, selling

HOW BUSINESSES USE INFORMATION SYSTEMS

Biz processes cont'd

•Finance & accounting:

- Paying creditors, creating financial statements, managing cash accounts

•Human resources:

- Hiring employees, evaluating performance, enrolling employees in benefits plans

Many business processes are cross-functional, transcending the boundaries between sales, marketing, manufacturing, and research and development.

These cross-functional processes cut across the traditional organizational structure, grouping employees from different functional specialties to complete a piece of work.

HOW BUSINESSES USE INFORMATION SYSTEMS

Example: Order Fulfillment Process at many companies requires cooperation among the sales function (receiving the order, entering the order), the accounting function (credit checking and billing for the order), and the manufacturing function (assembling and shipping the orc

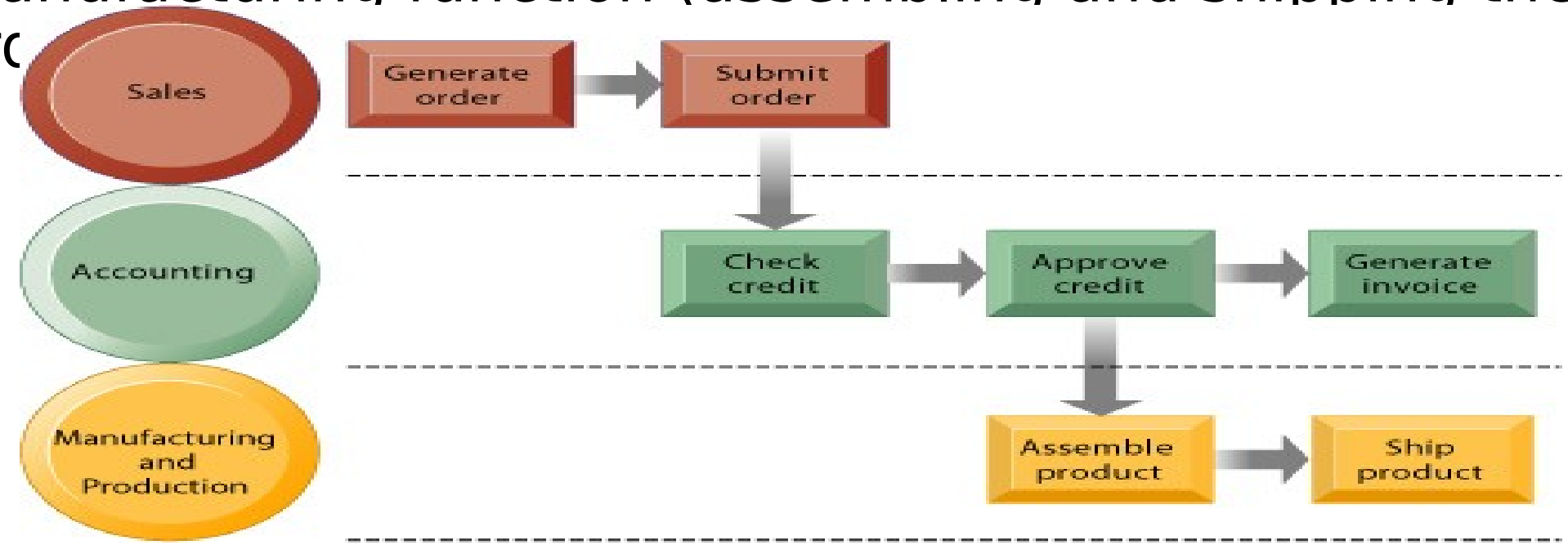


Figure 2-12

HOW BUSINESSES USE INFORMATION SYSTEMS

ENTERPRISE APPLICATIONS- INTEGRATING FUNCTIONS AND BUSINESS PROCESSES

Enterprise applications:

•Designed to support organization-wide process coordination and integration

Consist of:

•Enterprise systems

•Supply chain management systems

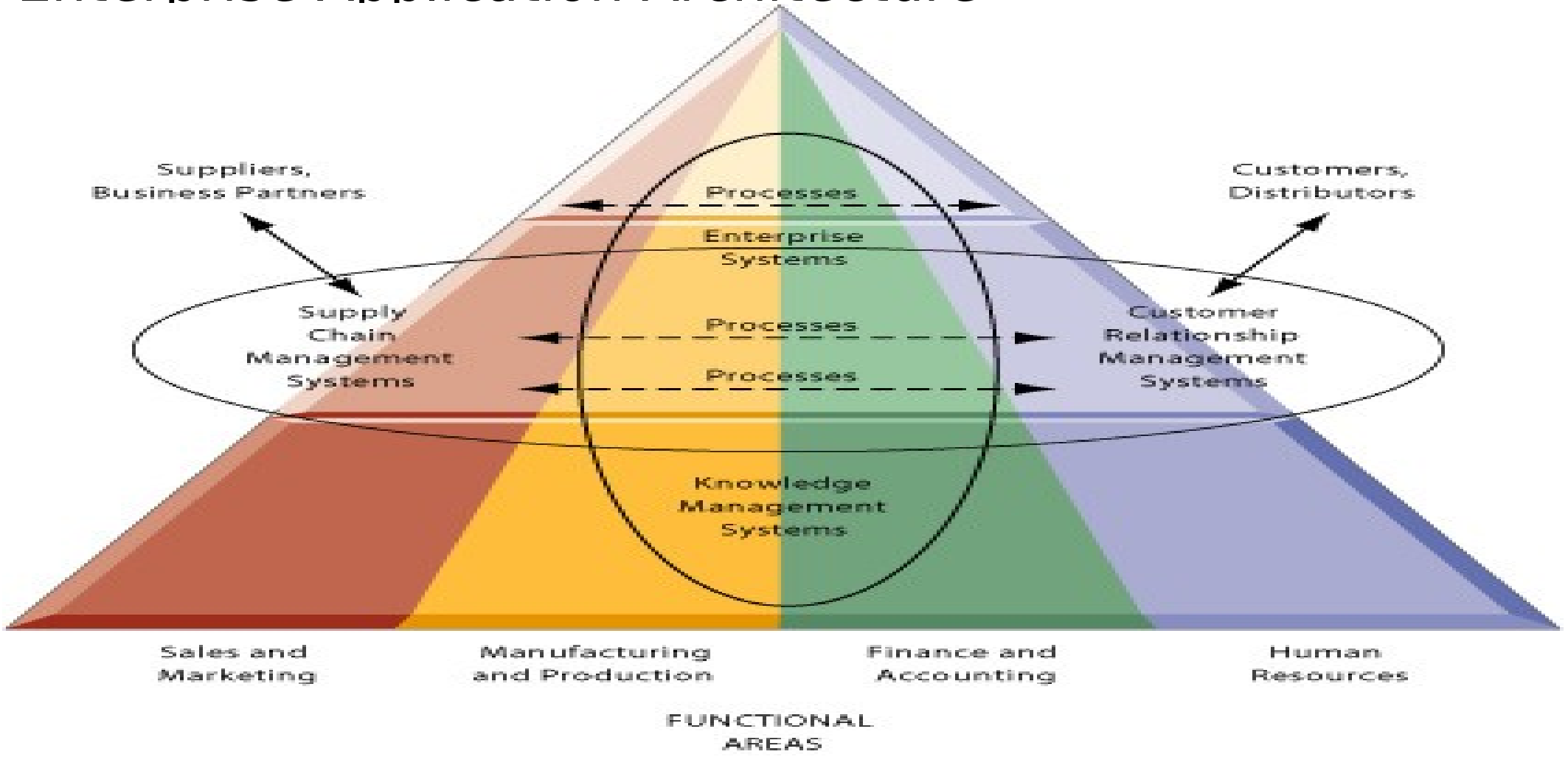
•Customer relationship management systems

•Knowledge management systems

These contemporary systems take advantage of corporate intranets and Web technologies that enable the efficient transfer of information within the firm and to partner firms. These systems are inherently cross-level, cross-functional, and business process oriented.

HOW BUSINESSES USE INFORMATION SYSTEMS

Enterprise Application Architecture



Enterprise Application Architecture

- Enterprise systems create an integrated organization-wide platform to coordinate key internal processes of the firm.
- Information systems for supply chain management (SCM) and customer relationship management (CRM) help coordinate processes for managing the firm’s relationship with its suppliers and customers.
- Knowledge management systems enable organizations to better manage processes for capturing and applying knowledge and expertise.
- Collectively, these four systems represent the areas in which corporations are digitally integrating their information flows and making major information system investments.

Enterprise Application Architecture

Traditional “Silo” View of Information Systems

Within the business**:** There are functions, each having its uses of information systems

Outside the organization’s boundaries**:** There are customers and vendors

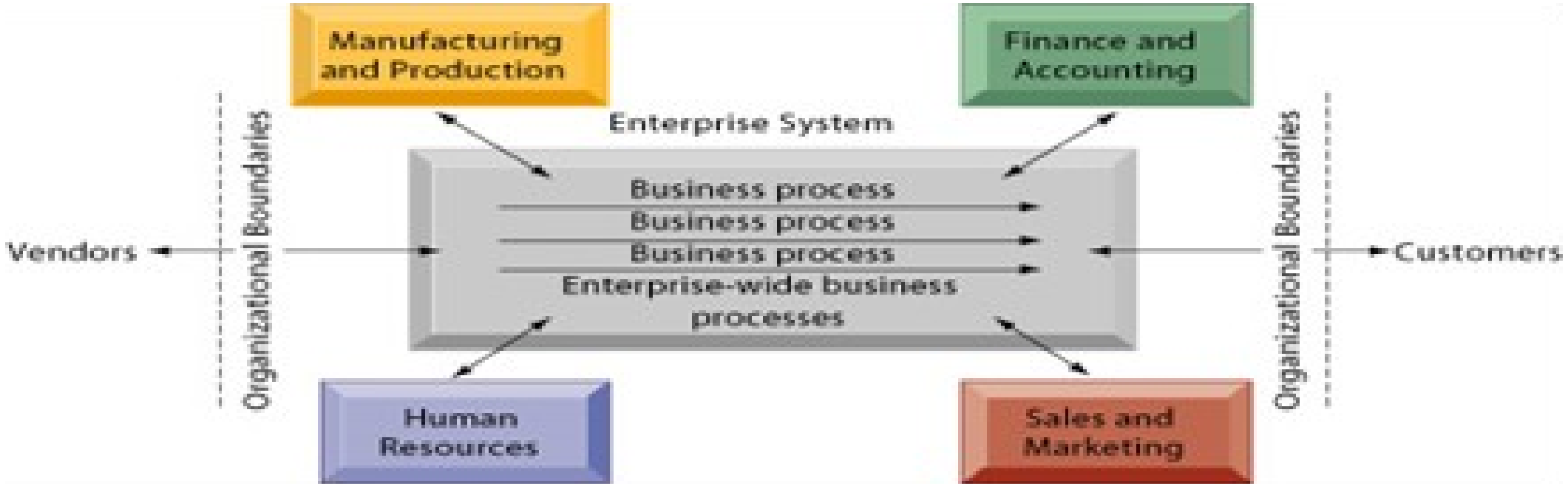
- Functions tend to work in isolation do not “talk” to each other and thus cannot automatically exchange information.
- Managers might have a hard time assembling the data they need for a comprehensive, overall picture of the organization’s operations.

Enterprise Application Architecture

Traditional View of Systems

Figure 2-14

Enterprise Application Architecture



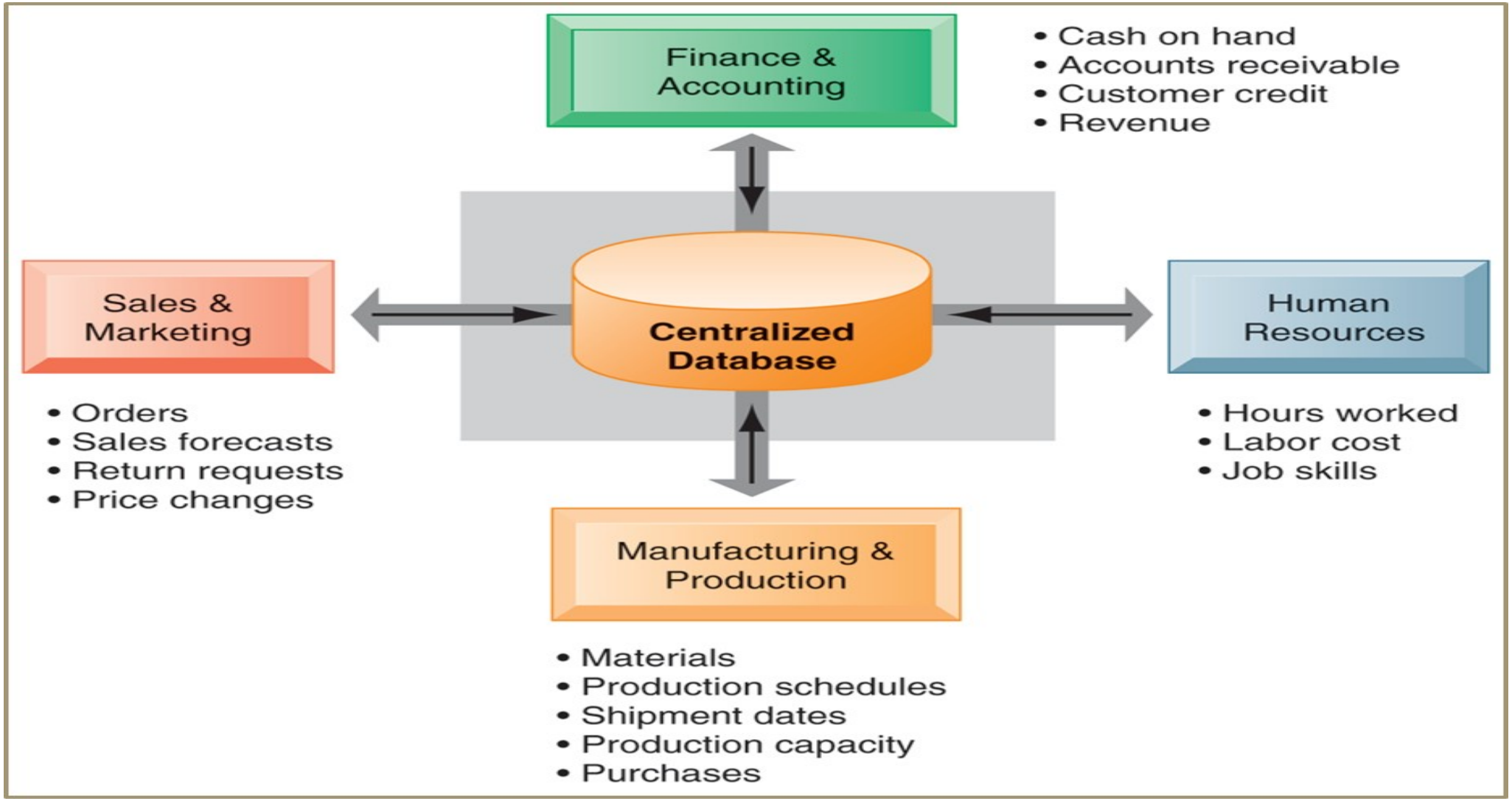
Enterprise Application Architecture

Enterprise Systems

- Enterprise systems, also known as enterprise resource planning (ERP) systems, provide a single information system for organization-wide coordination and integration of key business processes.
- Enterprise systems feature a set of integrated software modules and a central database that enables data to be shared by many different business processes and functional areas throughout the enterprise.
- Information that was previously fragmented in different systems can seamlessly flow throughout the firm so that it can be shared by business processes in manufacturing, accounting, human resources, and other areas.

Enterprise Application Architecture

Enterprise systems



Enterprise Application Architecture

Benefits of Enterprise Systems

- Collects data from different firm functions and stores data in single central data repository
- Managers emerge with more precise and timely information for coordinating the daily operations of the business and a firm-wide view of business processes and information flows.
- More efficient operations & Efficient response to customer orders (production, inventory)
- Include analytical tools to evaluate overall organizational performance

Enterprise Application Architecture

Challenges of Enterprise Systems

- Difficult to build: Require fundamental changes in the way the business operates
- Technology: Require complex pieces of software and large investments of time, money, and expertise
- Centralized organizational coordination and decision making: Not the best way for the firms to operate

Enterprise Application Architecture

Supply Chain Management (SCM

- Closes the linkage and coordination of activities involved in buying, making, and moving a product
- Integrates supplier, manufacturer, distributor, and customer logistics time
- Reduces time, redundant effort, and inventory costs
- Network of organizations and business processes
- Helps in procurement of materials, transformation of raw materials into intermediate and finished products
- Helps in distribution of the finished products to customers
- Includes reverse logistics - returned items flow in the reverse direction from the buyer back to the seller

Enterprise Application Architecture

Information from Supply Chain Management Systems helps firms:

- Decide when and what to produce, store, and move
- Rapidly communicate orders
- Track the status of orders
- Check inventory availability and monitor inventory levels
- Reduce inventory, transportation, and warehousing costs
- Track shipments
- Plan production based on actual customer demand
- Rapidly communicate changes in product design

Enterprise Application Architecture

Customer Relationship Management (CRM

- Instead of treating customers as exploitable sources of income, businesses are now viewing them as long-term assets to be nurtured through customer relationship management.
- Customer relationship management (CRM) systems focus on coordinating all of the business processes surrounding the firm’s interactions with its customers in sales, marketing, and service to optimize revenue, customer satisfaction, and customer retention.
- The ideal CRM system provides end-to-end customer care from receipt of an order through product delivery.
- Provides end- to- end customer care and provides a unified view of customer across the company

Enterprise Application Architecture

CRM cont'd

•Consolidates customer data from multiple sources and provides analytical tools for answering questions

•Good CRM systems provide data and analytical tools for answering questions such as these:

-What is the value of a particular customer to the firm over his or her lifetime?

-Who are our most loyal customers? (It can cost six times more to sell to a new customer than to an existing customer.)

-Who are our most profitable customers? What do these profitable customers want to buy?

•Firms can then use the answers to these questions to acquire new customers, provide better service and support to existing customers, customize their offerings more precisely to customer preferences, and provide ongoing value to retain profitable customers.

Enterprise Application Architecture

Business value of CRM

- Increased customer satisfaction
- Reduced direct-marketing costs
- More effective marketing
- Lower costs for customer acquisition/retention
- Increased sales revenue
- Reduce churn rate

- Number of customers who stop using or purchasing products or services from a company.

- Indicator of growth or decline of firm’s customer base

Enterprise Application Architecture

Knowledge Management Systems

- Knowing how to do things effectively and efficiently in ways others cannot duplicate is prime source of profit and competitive advantage
  - E.g., Having a unique build-to-order production system
- Some firms perform better than others because they have better knowledge about how to create, produce, and deliver products and services.
- KMS collects relevant knowledge and make it available wherever and whenever it is needed to support business processes and management decisions
- Also link the firm to external sources of knowledge

Enterprise Application Architecture

KMS cont'd

•Support processes for acquiring, storing, distributing, and applying knowledge

•They include enterprise-wide systems for:

- Managing and distributing documents, graphics, and other digital knowledge objects

- Systems for creating corporate knowledge directories of employees with special areas of expertise.

- Office systems for distributing knowledge and information, and

- Knowledge work systems to facilitate knowledge creation.

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Knowledge management systems: Set of business processes developed in an organization to create, store, transfer, and apply knowledge

Knowledge management value chain:

Each stage adds value to raw data and information as they are transformed into usable knowledge

- Knowledge acquisition
- Knowledge storage
- Knowledge dissemination
- Knowledge application

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Knowledge management value chain

1. Knowledge acquisition

•Documenting tacit and explicit knowledge

- Storing documents, reports, presentations, best practices

- Unstructured documents (e.g., e-mails)

- Developing online expert networks

•Creating knowledge

•Tracking data from TPS and external sources

Enterprise Application Architecture

KM value chain cont’d

2. Knowledge storage

•Databases

•Document management systems

•Role of management:

-Support development of planned knowledge storage systems

-Encourage development of corporate-wide schemas for indexing documents

-Reward employees for taking time to update and store documents properly

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3. Knowledge dissemination

- Portals
- Push e-mail reports
- Search engines
- Collaboration tools
- A deluge/ flooding of information?

- Training programs, informal networks, and shared management experience help managers focus attention on important information

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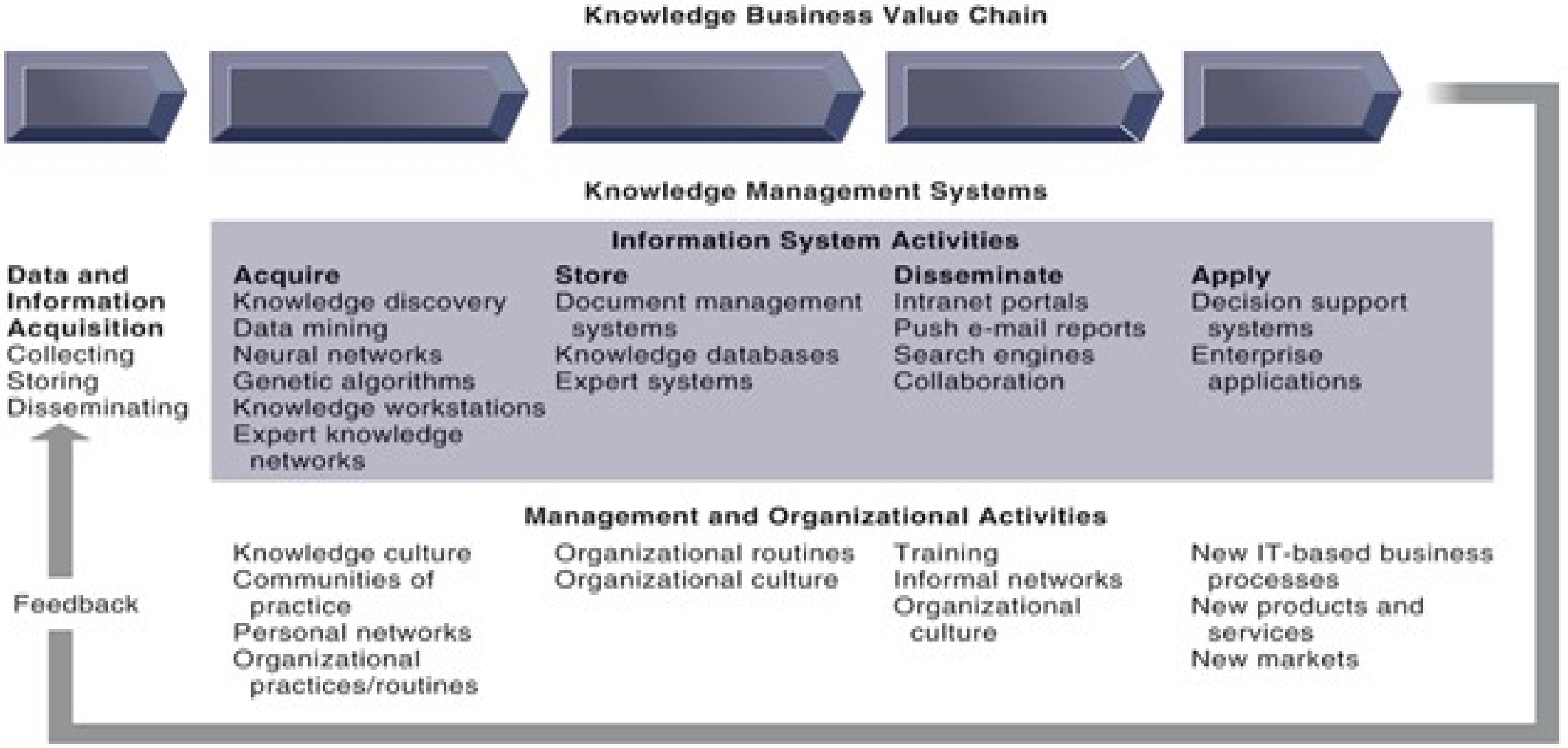
4. Knowledge application

To provide return on investment, organizational knowledge must become systematic part of management decision making and become situated in decision-support systems

- New business practices
- New products and services
- New markets

THE KNOWLEDGE MANAGEMENT VALUE CHAIN



THE KNOWLEDGE MANAGEMENT VALUE CHAIN

- Requirements of knowledge work systems
  - Substantial computing power for graphics, complex calculations
  - Powerful graphics and analytical tools
  - Communications and document management
  - Access to external databases
  - User-friendly interfaces
  - Optimized for tasks to be performed (design engineering, financial analysis)

OTHER ENTERPRISE APPLICATIONS

- Manufacturing and Production Systems: machine control, production planning, facilities allocation.
- Sales and Marketing Systems: order processing, pricing analysis and sales trend forecasting
- Human Resource Management Systems: Training and development, compensation analysis, HR planning
- Accounting and Finance Systems: order processing, inventory control, accounts receivable, accounts payable, payroll