Business functions and business processes

The Business Environment

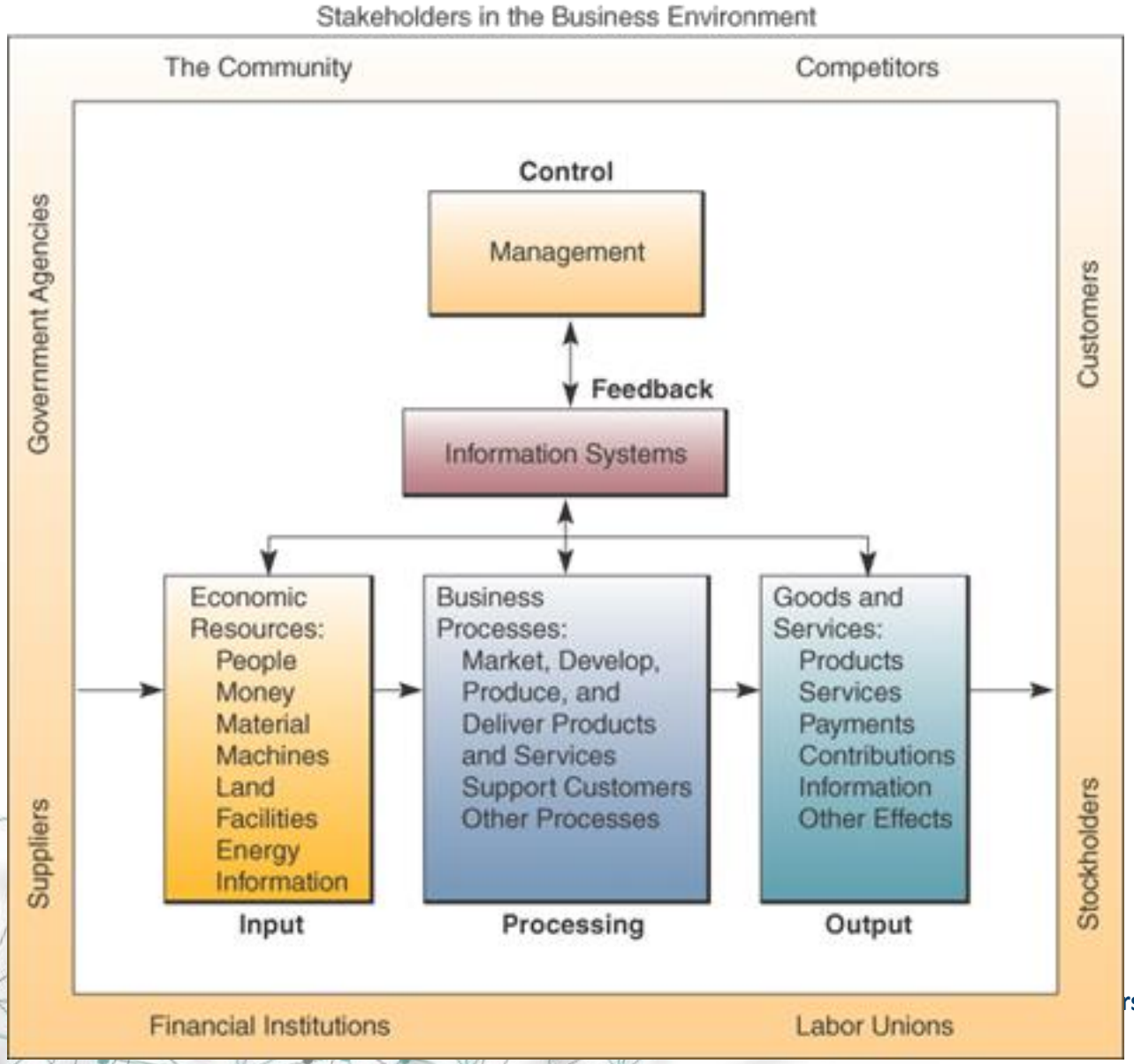
To be successful, an organization must **constantly monitor** and **respond** to — or even **anticipate** — **developments** in its environment.

A firm's environment includes specific groups with which the business must deal directly, such as **customers, suppliers,** and **competitors** as well as the broader **general environment**, including socioeconomic trends, political conditions, technological innovations, and global events.

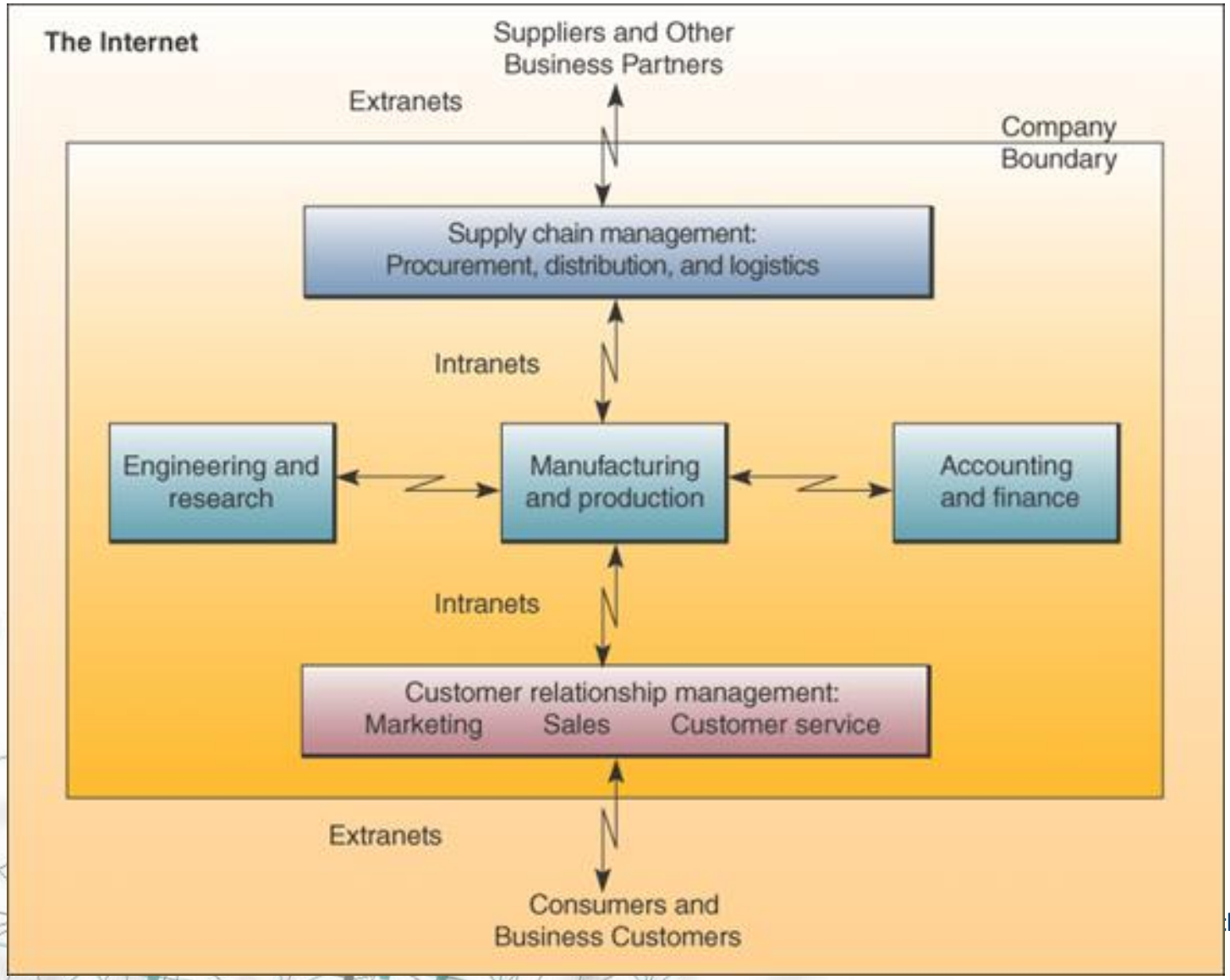
Global environment factors

Immediate environment factors

A Business as a System



E-Business


The Internet
Suppliers and Other Business Partners
Extranets
Company Boundary
Supply chain management: Procurement, distribution, and logistics
Intranets
Engineering and research
Manufacturing and production
Accounting and finance
Intranets
Customer relationship management: Marketing Sales Customer service
Extranets
Consumers and Business Customers

Components of a Business

The Four/(five) Major Functions of a Business

Every business, regardless of its size, must perform **four functions** to succeed.

It must **produce** the **product** or **service**;

market and **sell** the product;

keep track of **accounting** and **financial transactions**;

and perform basic **human resources tasks**, such as hiring an retaining employees.

Functional areas

ACCOUNTING	FINANCE	HUMAN RESOURCES	PRODUCTION/ OPERATIONS	MARKETING	
Profitability Planning	Financial Planning	Employment Planning, Outsourcing	Product Life Cycle Management	Sales Forecasting, Advertising Planning	STRATEGIC
Auditing, Budgeting	Investment Management	Benefits Administration, Performance Evaluation	Quality Control, Inventory Management	Customer Relations, Sales Force Automation	TACTICAL
Payroll, Accounts Payable, Accounts Receivable	Manage Cash, Manage Financial Transactions	Maintain Employee Records	Order Fulfillment, Order Processing	Set Pricing, Profile Customers	OPERATIONAL

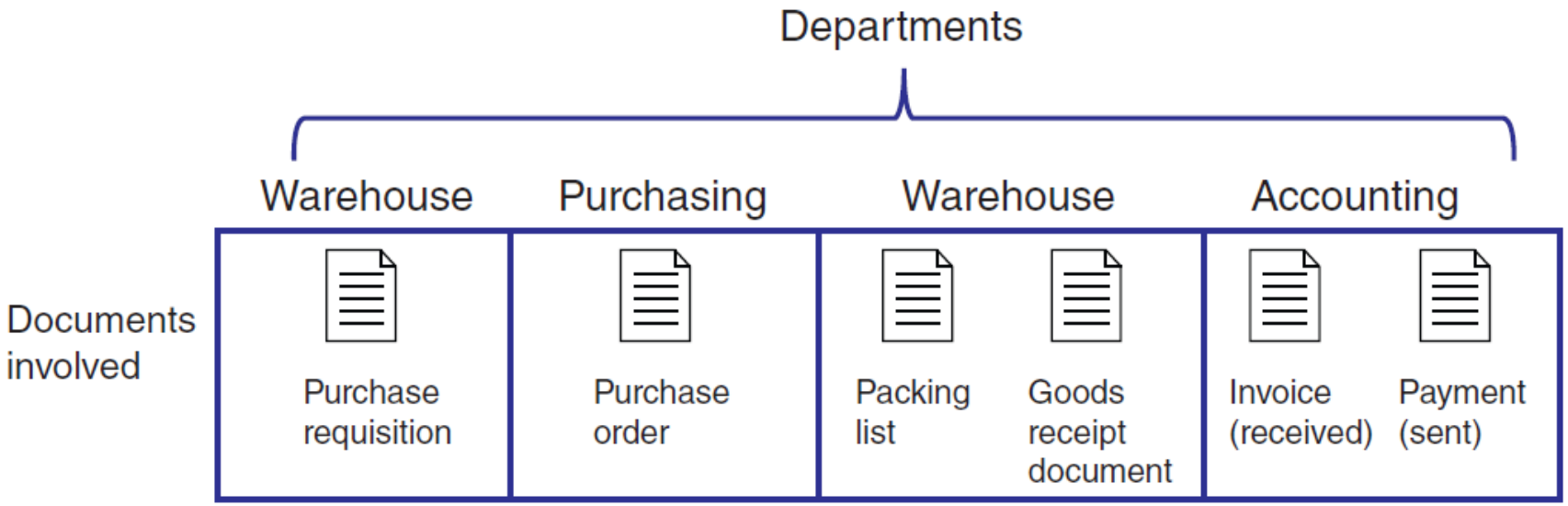
Organizing a Business

- **Five basic business entities:**
  - Suppliers
  - Customers
  - Employees
  - Invoices/payments
  - Products and services

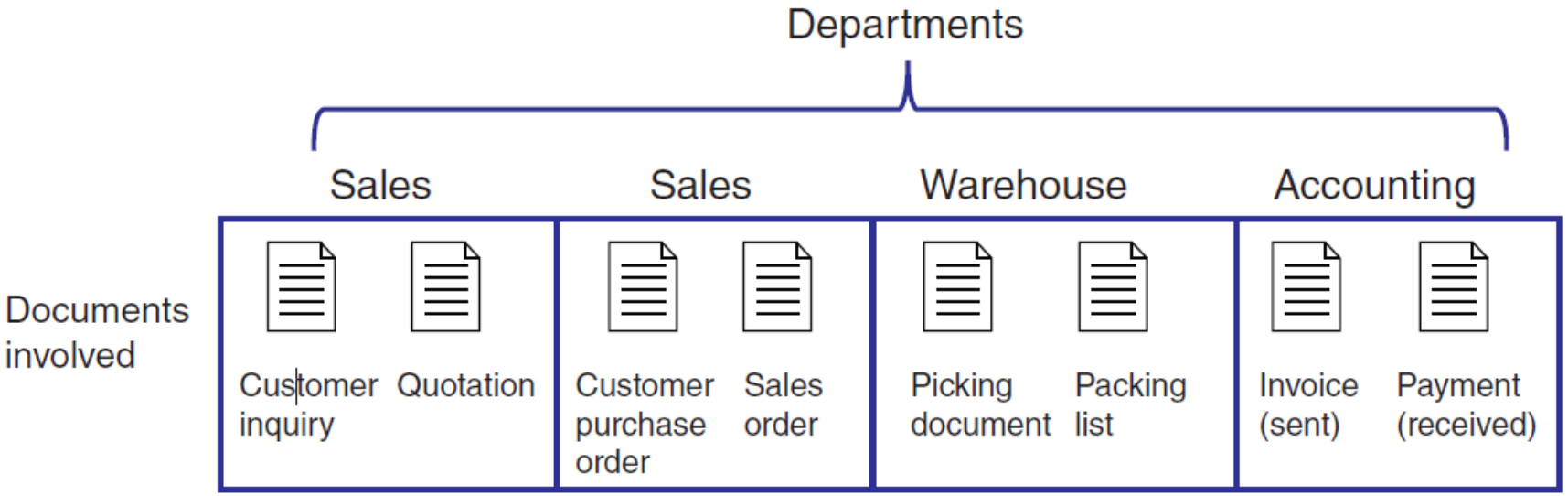
Three main interdependent processes

- Procurement Process
  - originates when a company needs to acquire goods or services from external sources, and it concludes when the company receives and pays for them
- Order Fulfillment Process
  - (order-to-cash process) process in which the company sells goods to a customer originating when the company receives a customer order, and concluding when the company receives a payment from the customer.
- Production Process
  - occurring only in companies that produce physical goods, this process follows one of two strategies: make-to-stock and make-to-order.

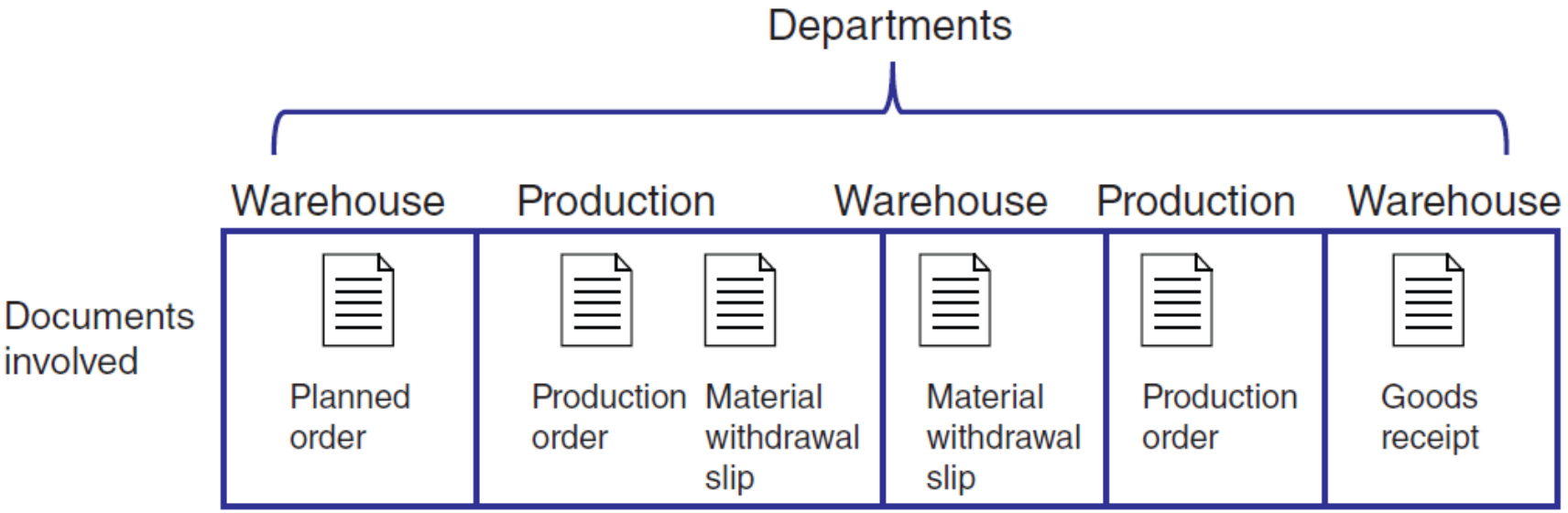
Departments & Documents Flow in Procurement



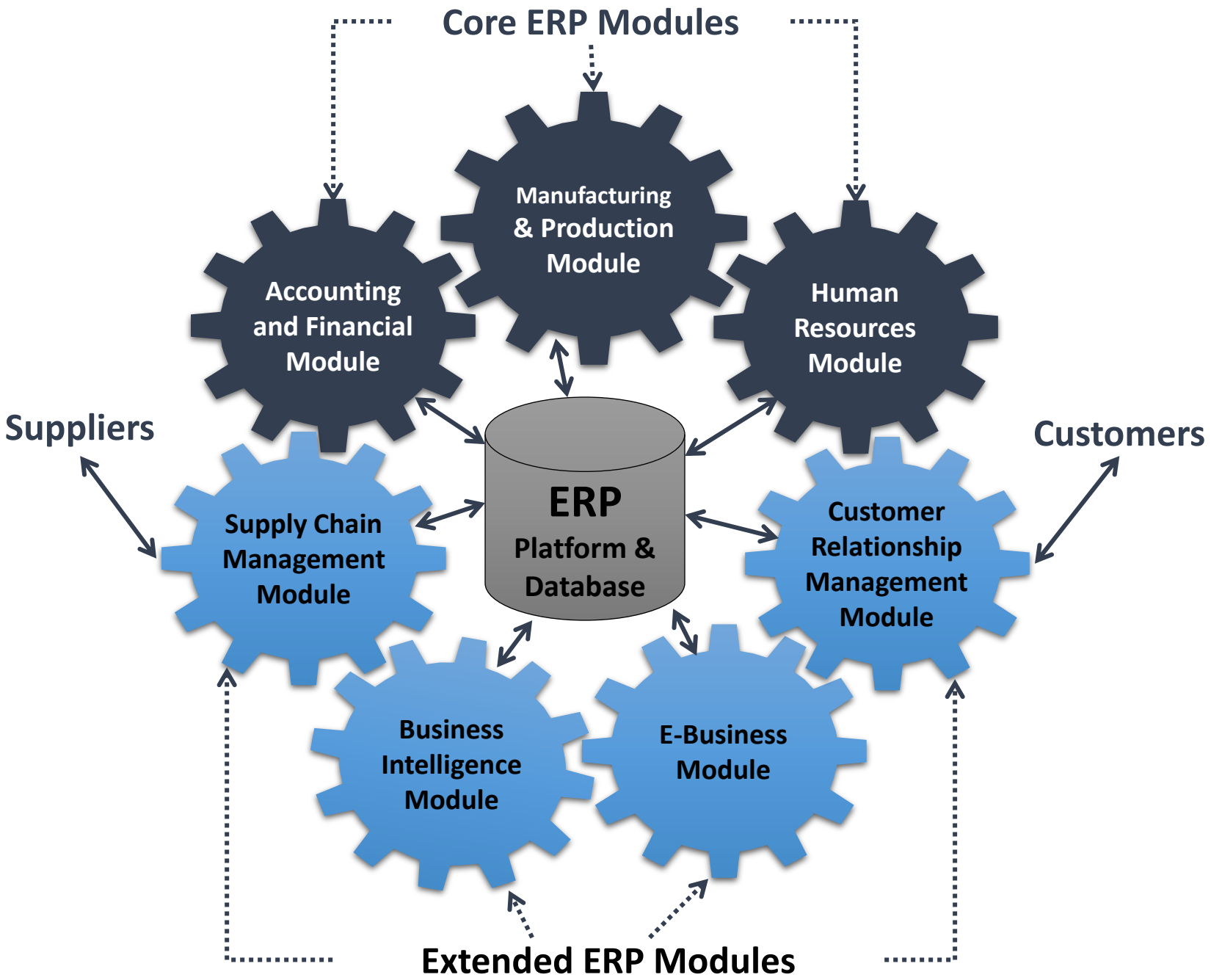
Departments & Documents Flow in Fulfillment



Departments & Documents Flow in Production



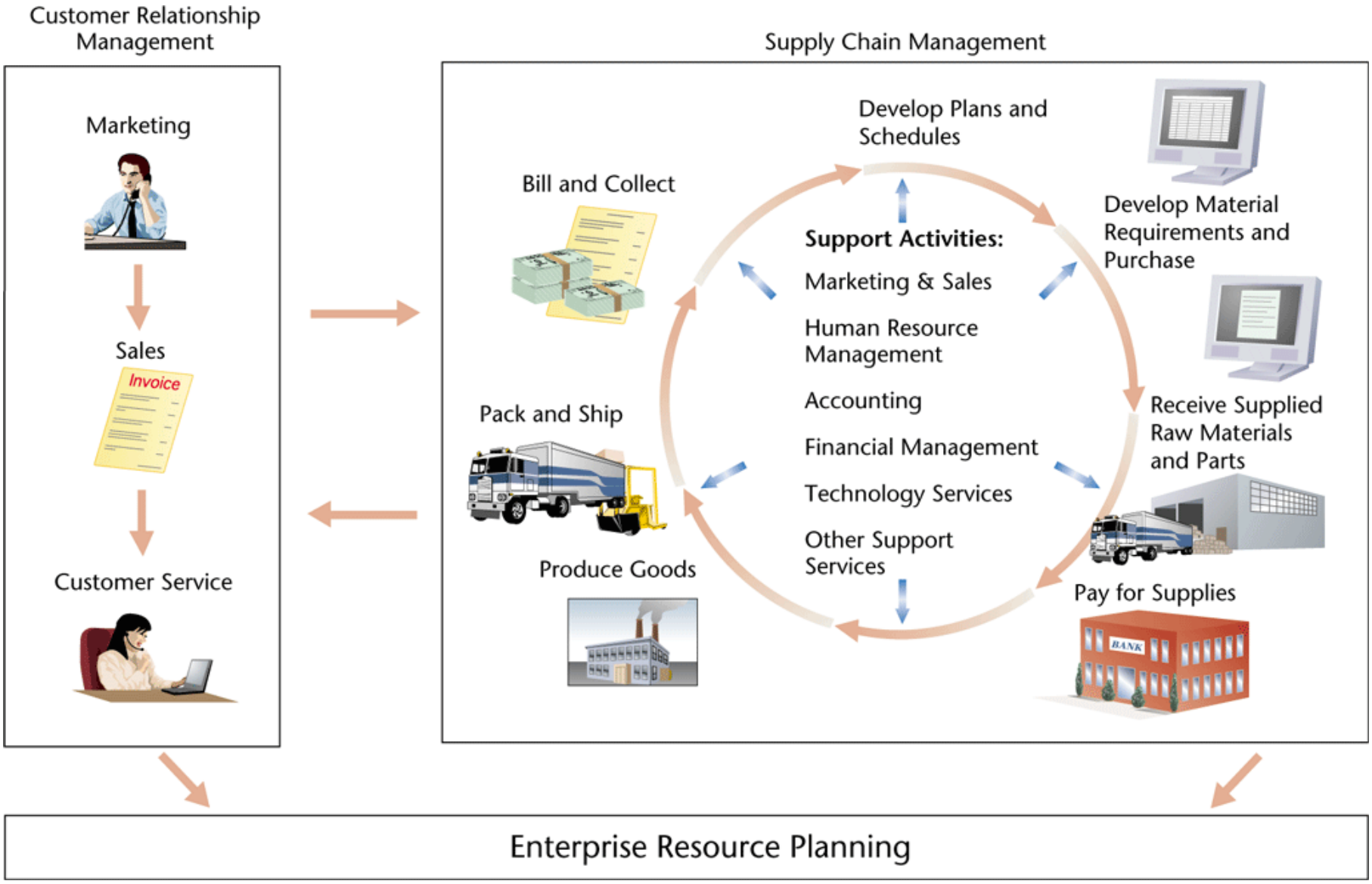
- **Enterprise Systems**
  - Enterprise resource planning (ERP) systems
  - Suite of integrated software modules and a common central database
  - Collects data from many divisions of firm for use in nearly all of firm's internal business activities
  - Information entered in one process is immediately available for other processes


Core ERP Modules
Manufacturing & Production Module
Accounting and Financial Module
Human Resources Module
Suppliers
Customers
ERP
Platform & Database
Supply Chain Management Module
Customer Relationship Management Module
Business Intelligence Module
E-Business Module
Extended ERP Modules

Interorganizational Processes: ERP with SCM and CRM

- Enterprise Resource Planning (ERP) Supply Chain Management (SCM) Systems
  - have the capability to **place automatic requests to replenish** raw materials/goods based on established criteria (e.g., below minimum quantity, expiration dates on perishable goods, etc.).

- Enterprise Resource Planning (ERP) Customer Relationship Management (CRM) Systems
  - generate **forecasting analyses** of product consumption based on critical variables such as geographical area, season, day of the week, and **type of customer**; and, identify **particular customer needs** and then utilize this information to suggest specific product campaigns.

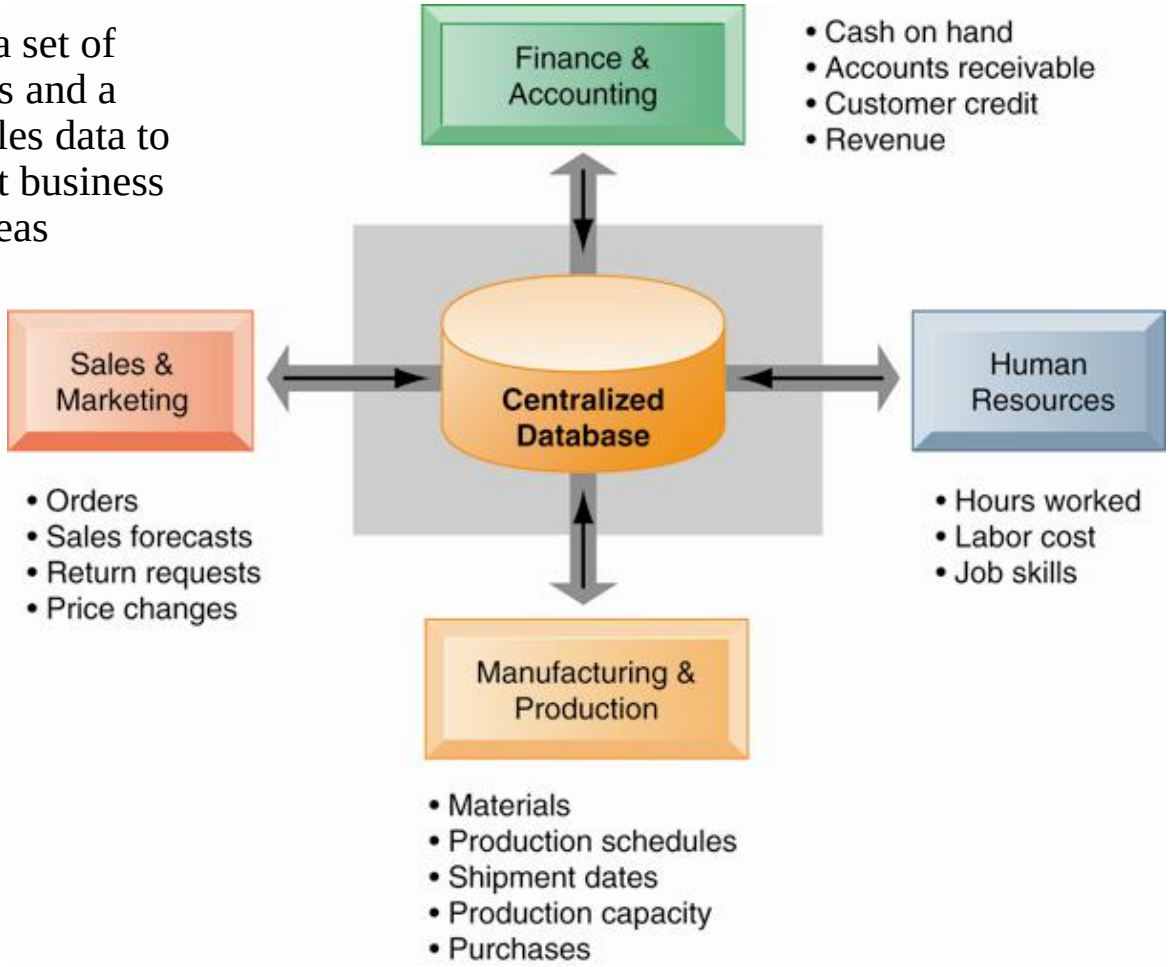


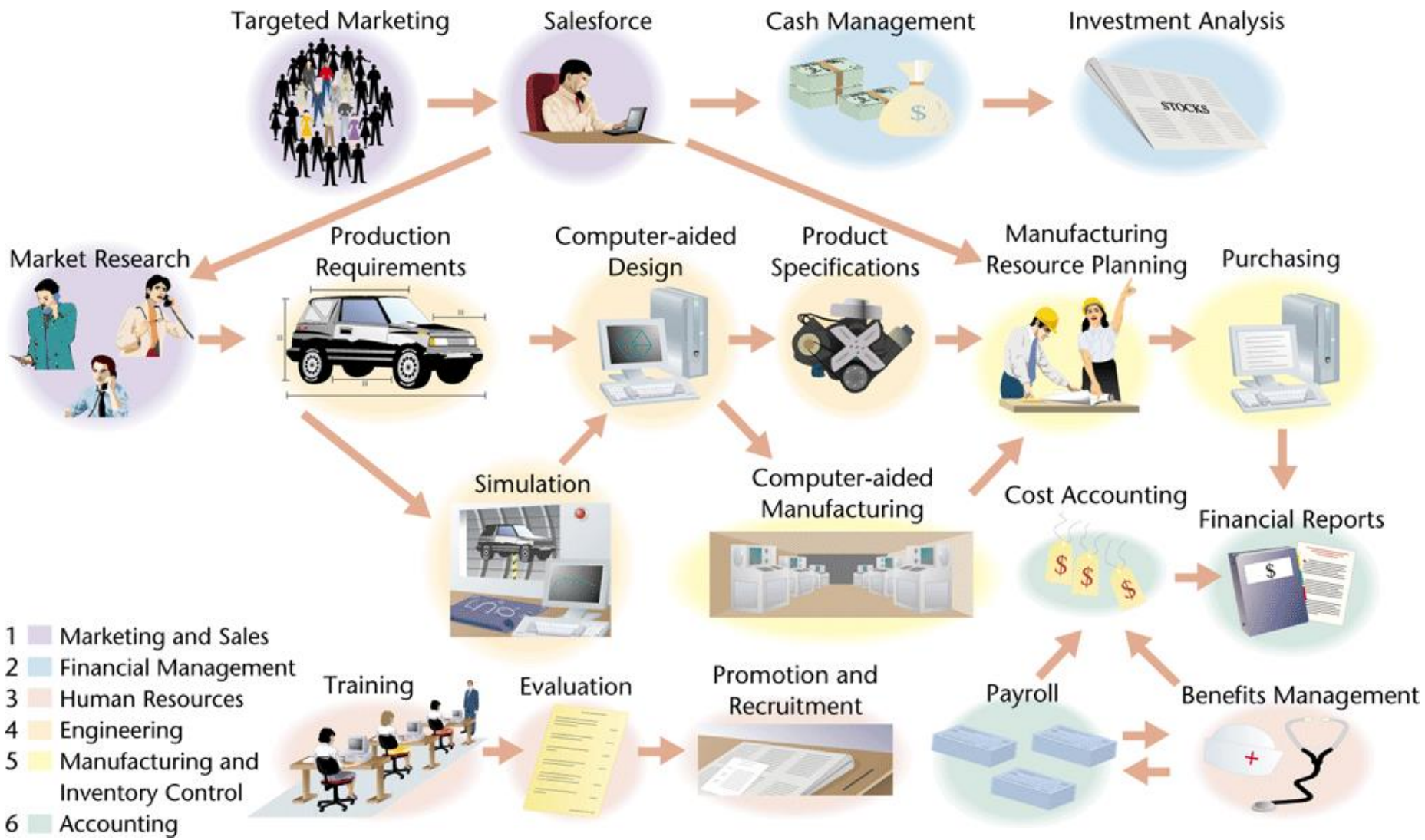
Business activities consist of customer relationship management, supply chain management, and supporting functions

- **Enterprise Software**
  - **Built around thousands of predefined business processes that reflect best practices**
    - Finance and accounting
    - Human resources
    - Manufacturing and production
    - Sales and marketing
    - Distribution and logistics
  - **To implement, firms:**
    - Select functions of system they wish to use.
    - Map business processes to software processes.
      - Use software's configuration tables for customizing.

How Enterprise Systems Work

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 systems in different business functions are interdependent

Business Processes and Information Systems

- **Business processes:**
  - Flows of material, information, knowledge
  - Sets of activities, steps
  - May be tied to functional area or be cross-functional
- **Businesses: Can be seen as collection of business processes** - formal organization that makes products or provides a service in order to make a profit
- **Business processes are organizations assets**

Business Processes

- **Logically related set of tasks that define how specific business tasks are performed**
  - The tasks each employee performs, in what order, and on what schedule
  - E.g., Steps in hiring an employee
- **Some processes tied to functional area**
  - Sales and marketing: identifying customers
- **Some processes are cross-functional**
  - Fulfilling customer order
  - Procurement
  - Production

- **Examples of functional business processes**
  - **Manufacturing and production**
    - Assembling the product
    - checking the product for quality
  - **Sales and marketing**
    - Identifying customers
    - selling the product
  - **Finance and accounting**
    - Creating financial statements
    - paying creditors
  - **Human resources**
    - Hiring employees
    - evaluating job performance

Business processes – organizational assets

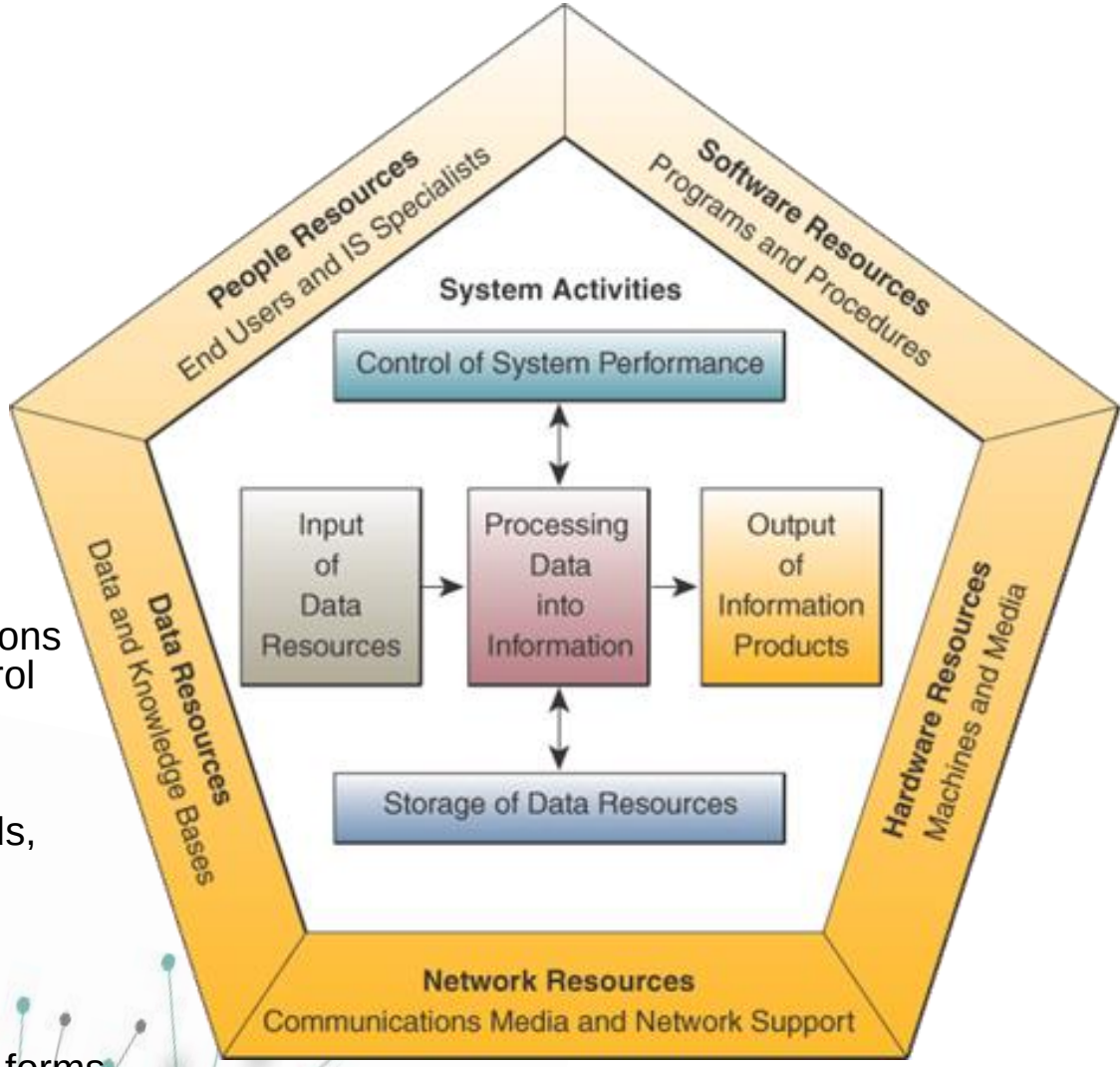
Business Processes and Information Systems

- **Business processes are the unique ways in which organizations coordinate and organize**
  - work activities,
  - information and knowledge
- **to produce a valuable product or service.**
- **Organizations have business processes**
  - supporting each of the major business functions
  - that span multiple functions.
- **Organizational efficiency can be increased by**
  - automating parts of these processes o
  - using information technology to redesign and streamline the processes.

- **Information technology enhances business processes by:**
  - **Increasing efficiency of existing processes**
    - Automating steps that were manual
  - **Enabling entirely new processes**
    - Change flow of information
    - Replace sequential steps with parallel steps
    - Eliminate delays in decision making
    - Support new business models

Information System Resources

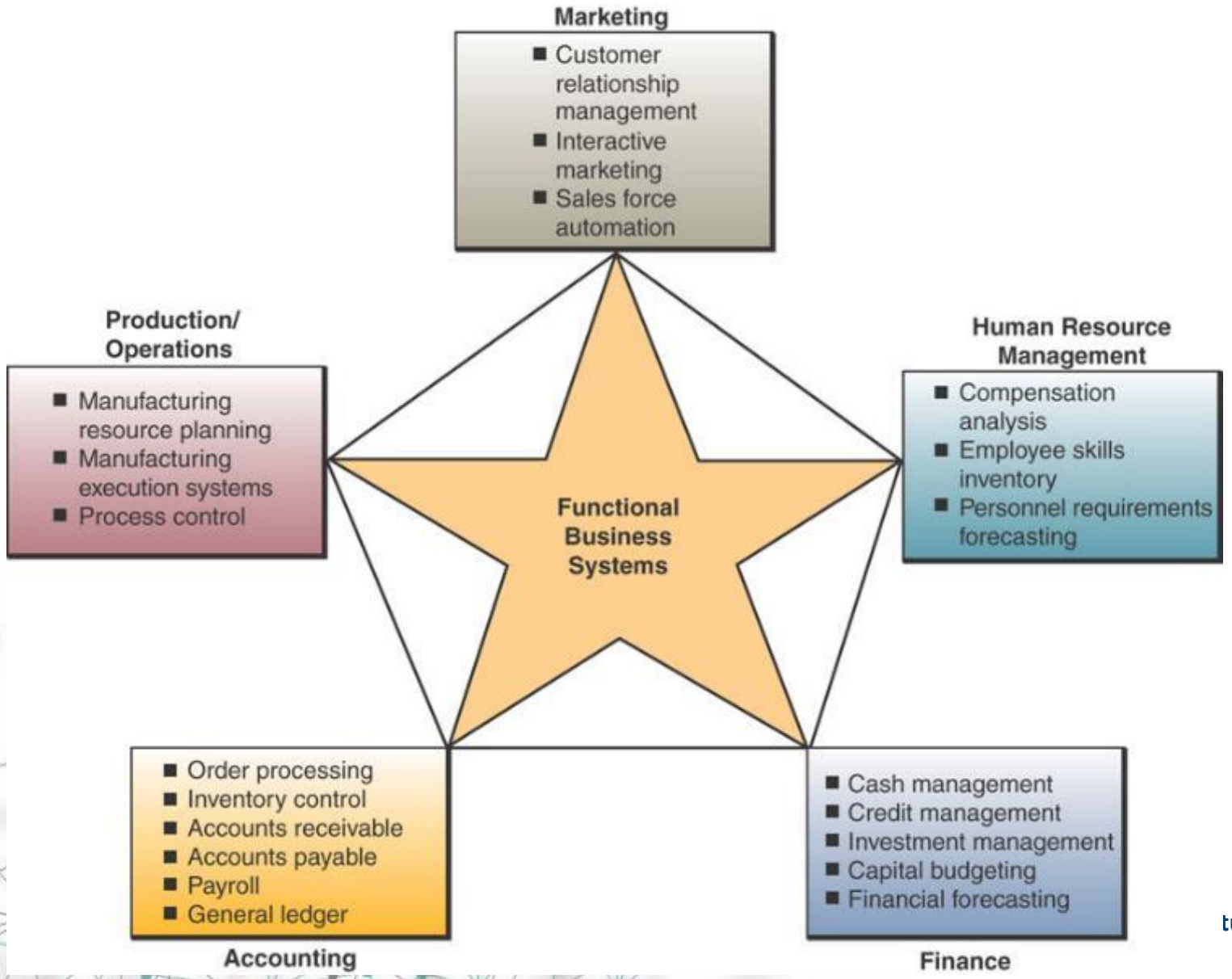
- People Resources
  - Specialists
  - End users
- Hardware Resources
  - Machines
  - Infrastructure
- Software Resources
  - Programs
  - Procedures
- Network Resources
  - Communications media, communications processors, network access and control software
- Data Resources
  - Product descriptions, customer records, employee files, inventory databases
- Information Products
  - Management reports and business documents using text and graphics displays, audio responses, and paper forms



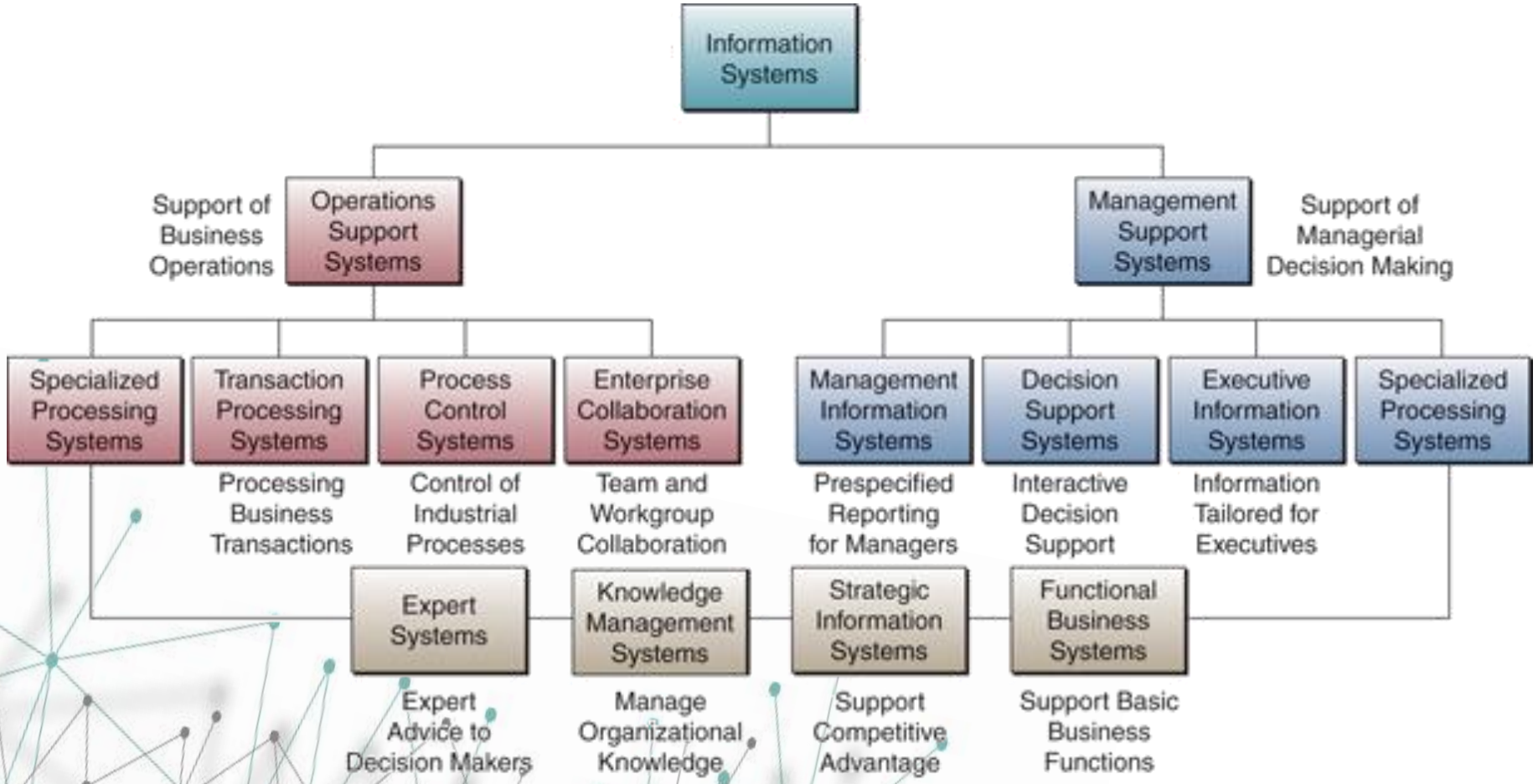
The Role of Information Systems in a Business

- **Firms invest in information systems in order to:**
  - Achieve operational excellence
  - Develop new products and services
  - Attain customer intimacy and service
  - Improve decision making
  - Promote competitive advantage
  - Ensure survival

IT in Business



Types of Information Systems in Business

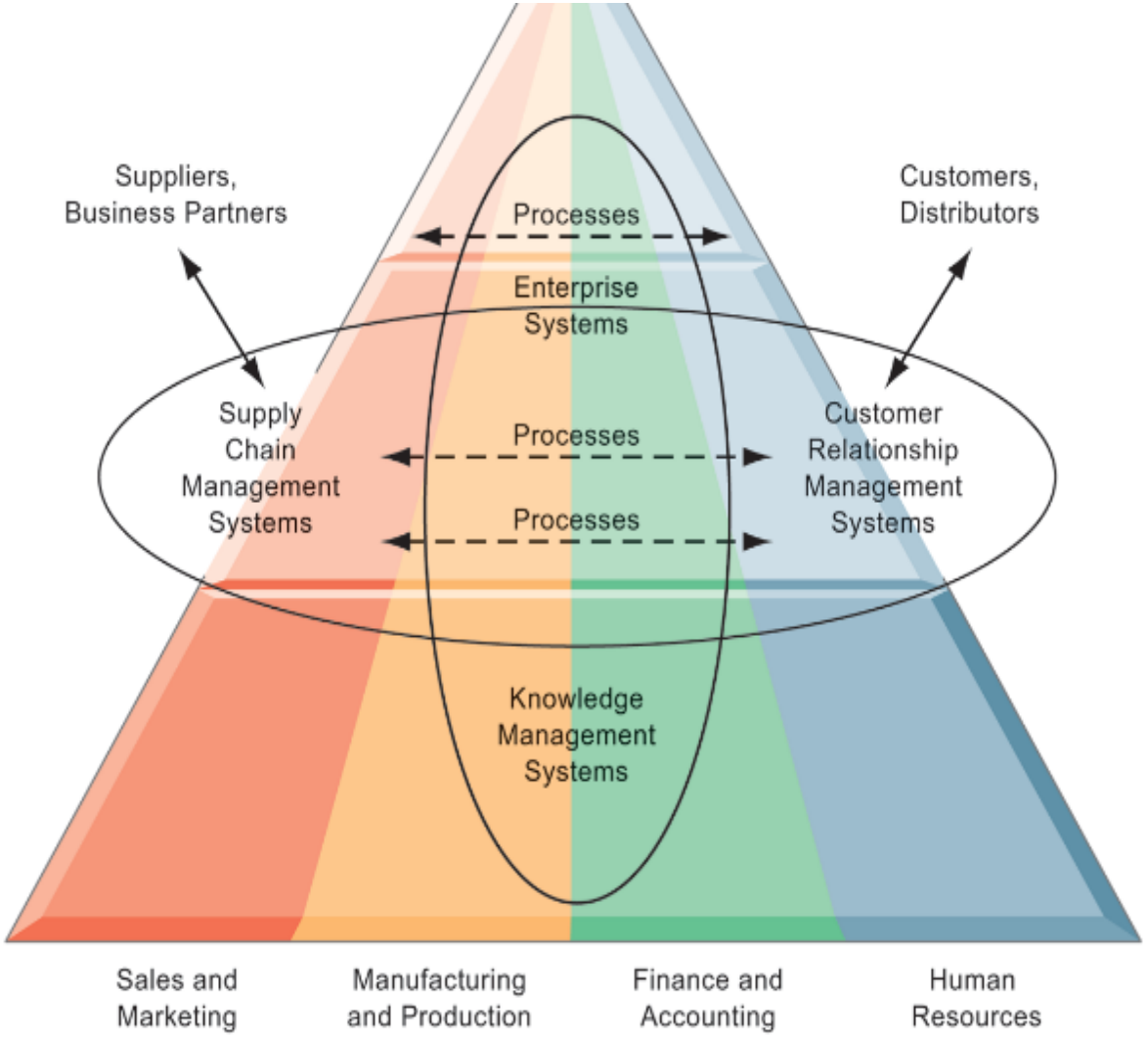


Types of Information Systems

- **Enterprise applications**
  - **Systems for linking the enterprise**
  - **Span functional areas**
  - **Execute business processes across firm**
  - **Include all levels of management**
  - **Four major applications:**
    - Enterprise systems (ES or ERP)
    - Supply chain management systems (SCM)
    - Customer relationship management systems (CRM)
    - Knowledge management systems (KMS)
  - **Enterprise applications are used to**
    - ensure that Management Support Systems, namely TPS, MIS, DSS, and ESS work together smoothly.

Enterprise Application Architecture

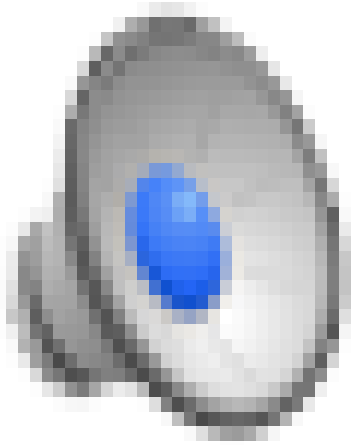
Enterprise applications automate processes that span multiple business functions and organizational levels and may extend outside the organization.



Enterprise Architecture

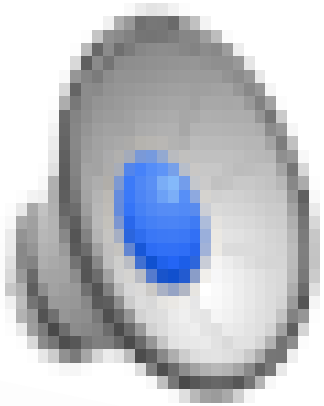
- **Enterprise architecture (EA) -** a **methodological** and **systematic approach** that allows the **representation** and alignment of all **artifacts** an **organization**, from its **strategic objectives** to **technology** that supports all of its operations, through the processes, information, applications, systems, people. (Gartner glossary, 2013)
- Organizational Architecture – four domains
    - Process Architecture, or Business Architecture,
    - Information Architecture,
    - Application Architecture
    - Technological Architecture.

Why Enterprise Architecture

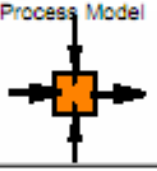
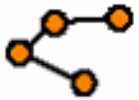
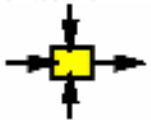
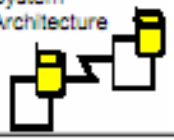
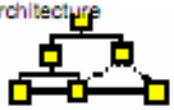
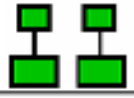
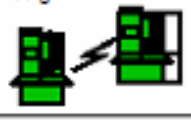


Enterprise Architecture

What is Enterprise Architecture



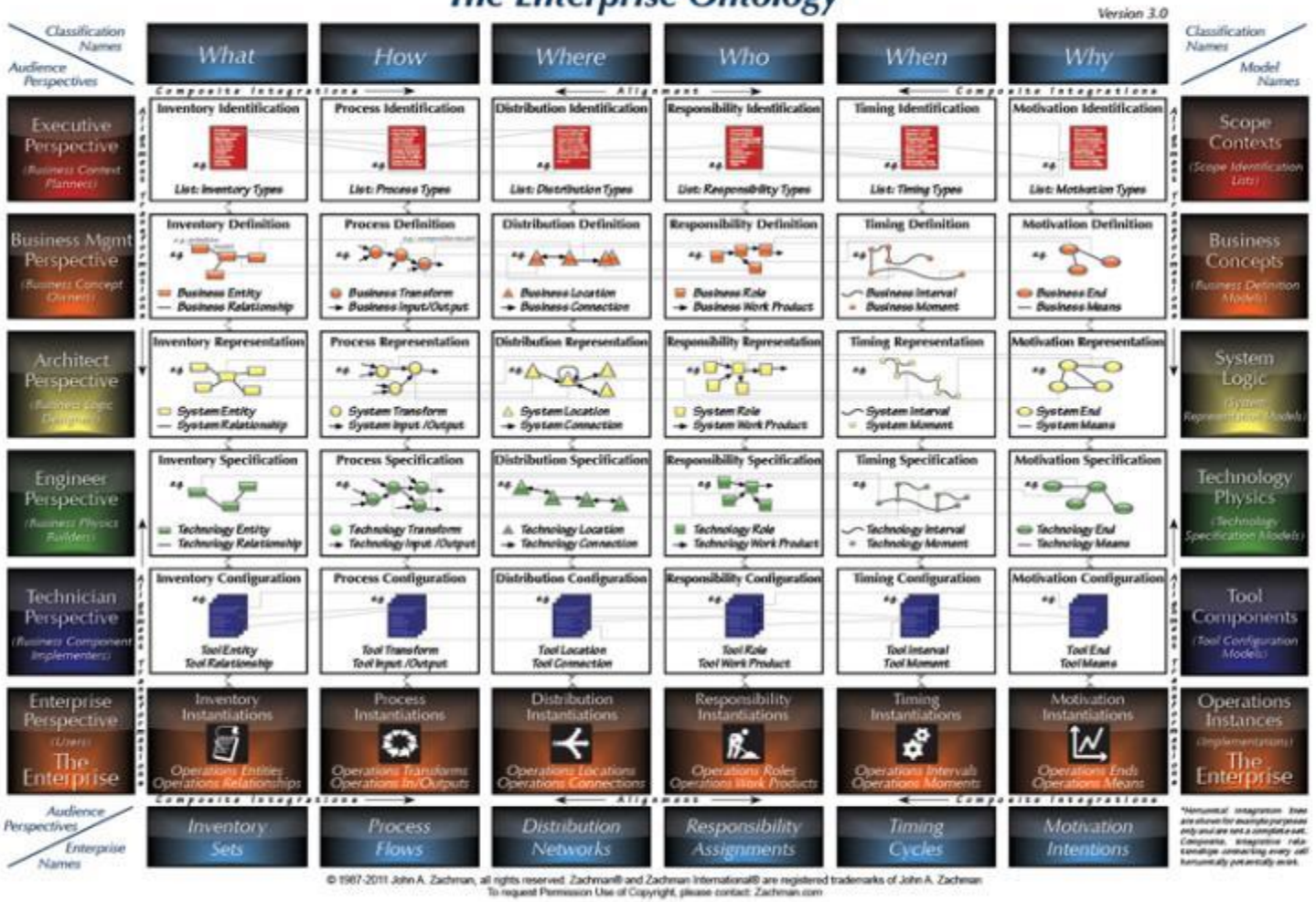
Zachman framework

	Data What	Process How	Network Where	Role Who	Timing When	Motivation Why
Scope (contextual) Planner	List of things important to the business 	List of processes the business performs 	List of locations in which the business operates 	List of business responsibilities 	List of events significant to the business 	List of business goals/strategy 
Business model (conceptual) Owner	e.g., Semantic Model 	e.g., Business Process Model 	e.g., Logistics Networks 	e.g., Workflow Model 	e.g., Master Schedule 	e.g., Business Plan 
System model (logical) Designer	e.g., Logical Data Model 	e.g., Application Architecture 	e.g., Distributed System Architecture 	e.g., Human Interface Architecture 	e.g., Processing Structure 	e.g., Business Rule Model 
Technology model (physical) Builder	e.g., Physical Data Model 	e.g., System Design 	e.g., Configuration Design 	e.g., Presentation Architecture 	e.g., Control Structure 	e.g., Rule Design 
Detailed representations (out-of-context) Subcontractor	e.g., Data Definition 	e.g., Program 	e.g., Network Architecture 	e.g., Security Architecture 	e.g., Timing Definition 	e.g., Rule Specification 
Functioning enterprise	e.g., Data	e.g., Process	e.g., Network	e.g., Organization	e.g., Schedule	e.g., Strategy

Columns represent the most important enterprise aspects (data, function/process, network, people, time, motivation), Rows - the perspective (scope, business, system, technology, details, assets) and group (planner, owner, designer, builder, subcontractor) of interest relative to an aspect.

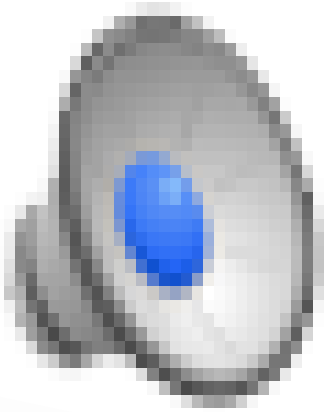
The Zachman Framework for Enterprise Architecture™

The Enterprise Ontology™

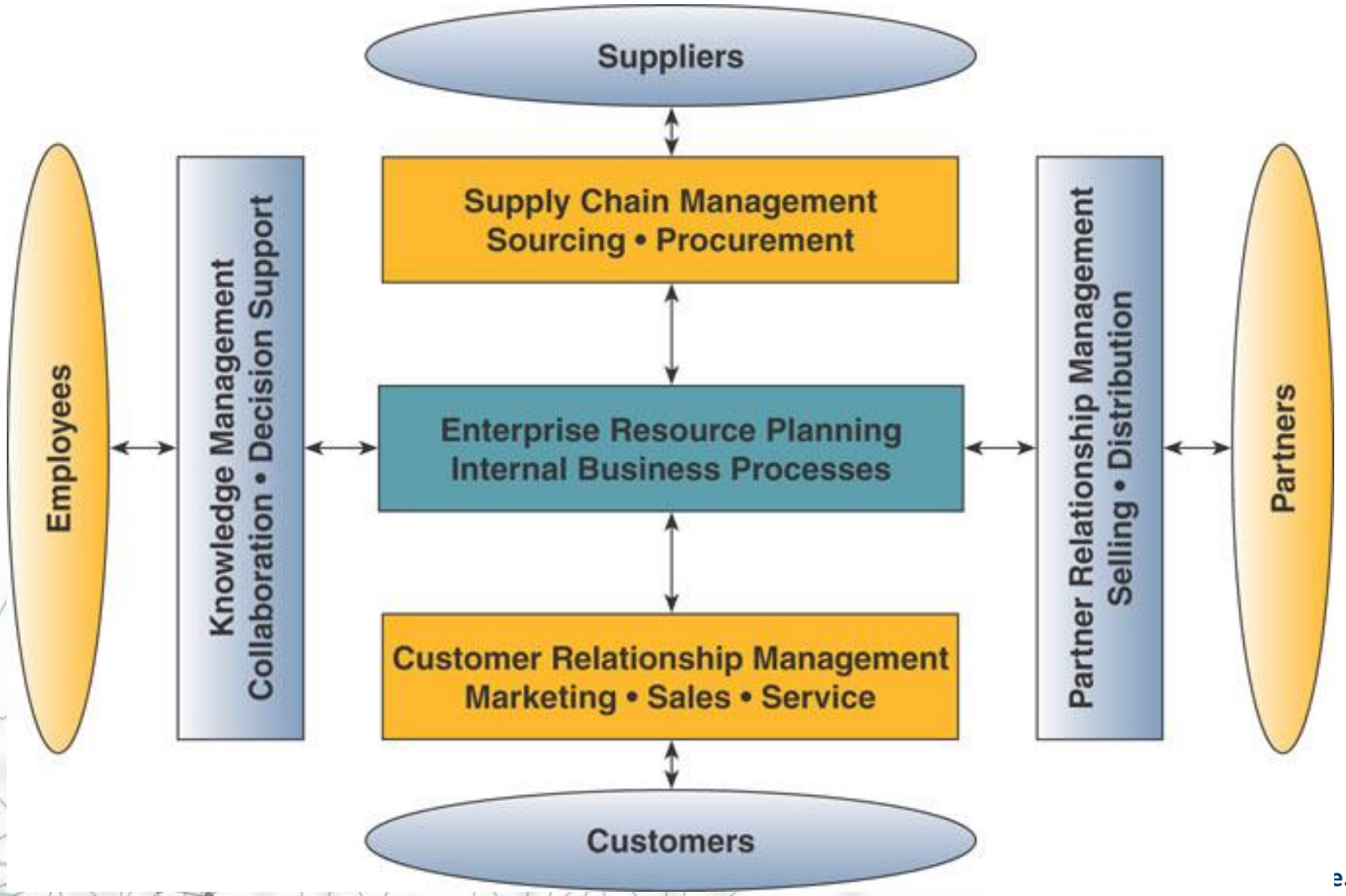


https://www.zachman.com/about-the-zachman-framework

What is Enterprise Architecture



Enterprise Application Architecture



Enterprise Applications deployment

- Build systems to **further integrate key internal business processes** and to **link the firm's business processes to those customers, suppliers**, and other companies in its industry.

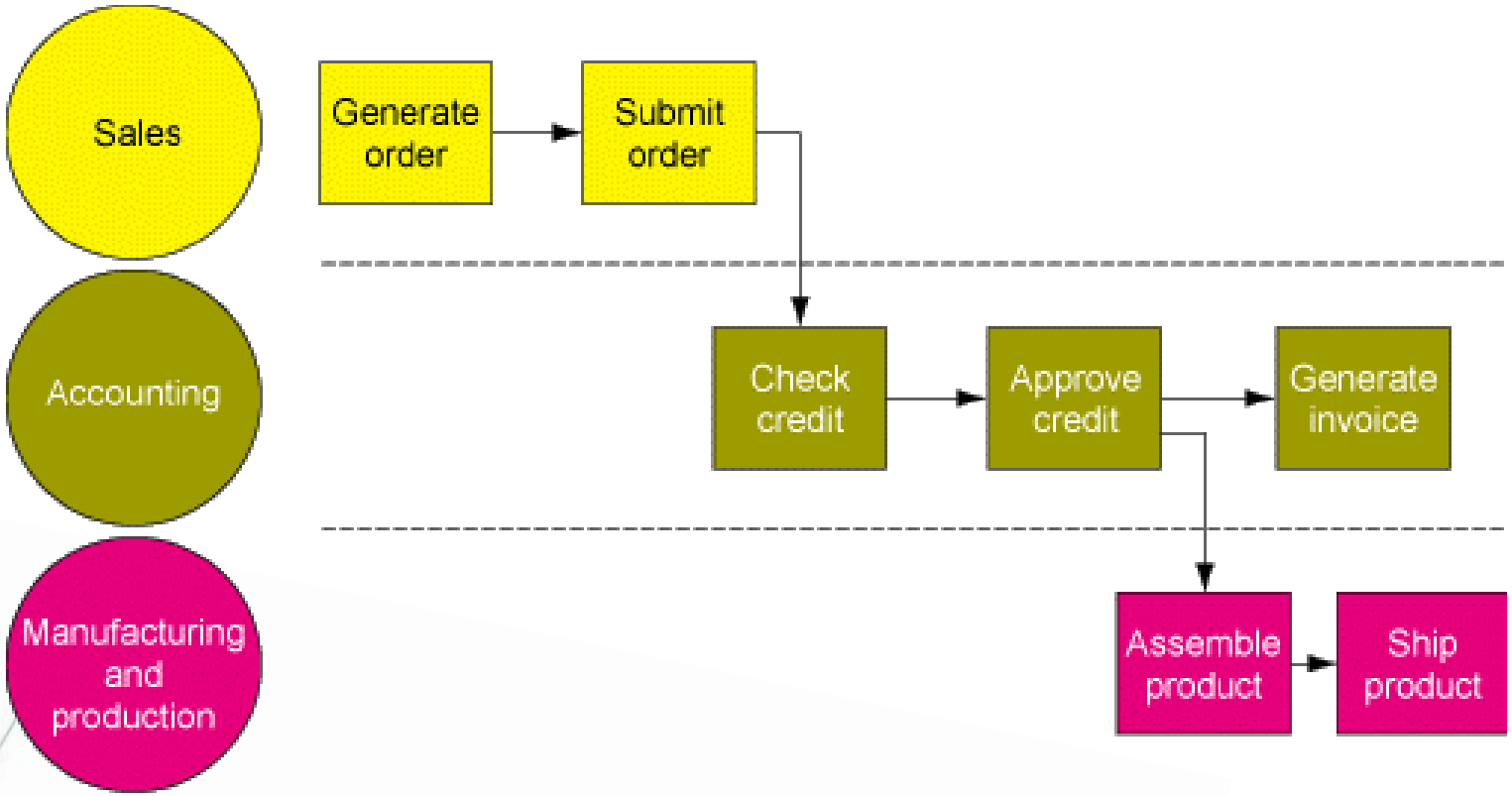
- **Enterprise applications** consisting of **enterprise systems** and systems for **supply chain management, customer relationship management**, and **knowledge management**, are increasingly used for this purpose.

- Deployment of enterprise applications requires firms to think more strategically about their business processes.

Enterprise Applications deployment

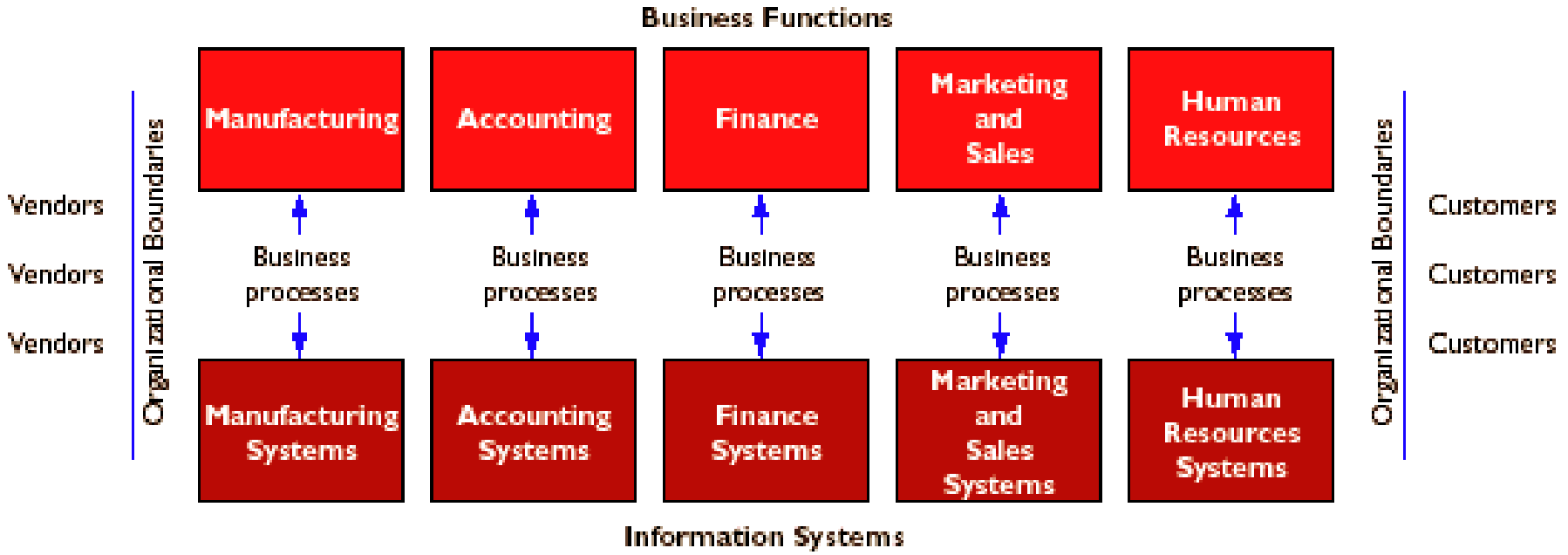
- **Business processes** are the unique ways in which organizations coordinate and organize
  - work activities, information and knowledge to produce a valuable product or service.
- Organizations have business processes supporting each of the major business functions and business processes that span multiple functions.
- Organizational efficiency can be increased
  - by automating parts of these processes or
  - by using information technology to redesign and streamline the processes.

Enterprise Applications deployment



The order fulfillment process. Generating and fulfilling an order is a multi-step process involving activities performed by the sales, manufacturing and production, and accounting functions.

Enterprise Applications deployment



Discrete business processes from sales, production, finance, and logistics can be integrated into company-wide business processes that flow across organizational levels and functions.

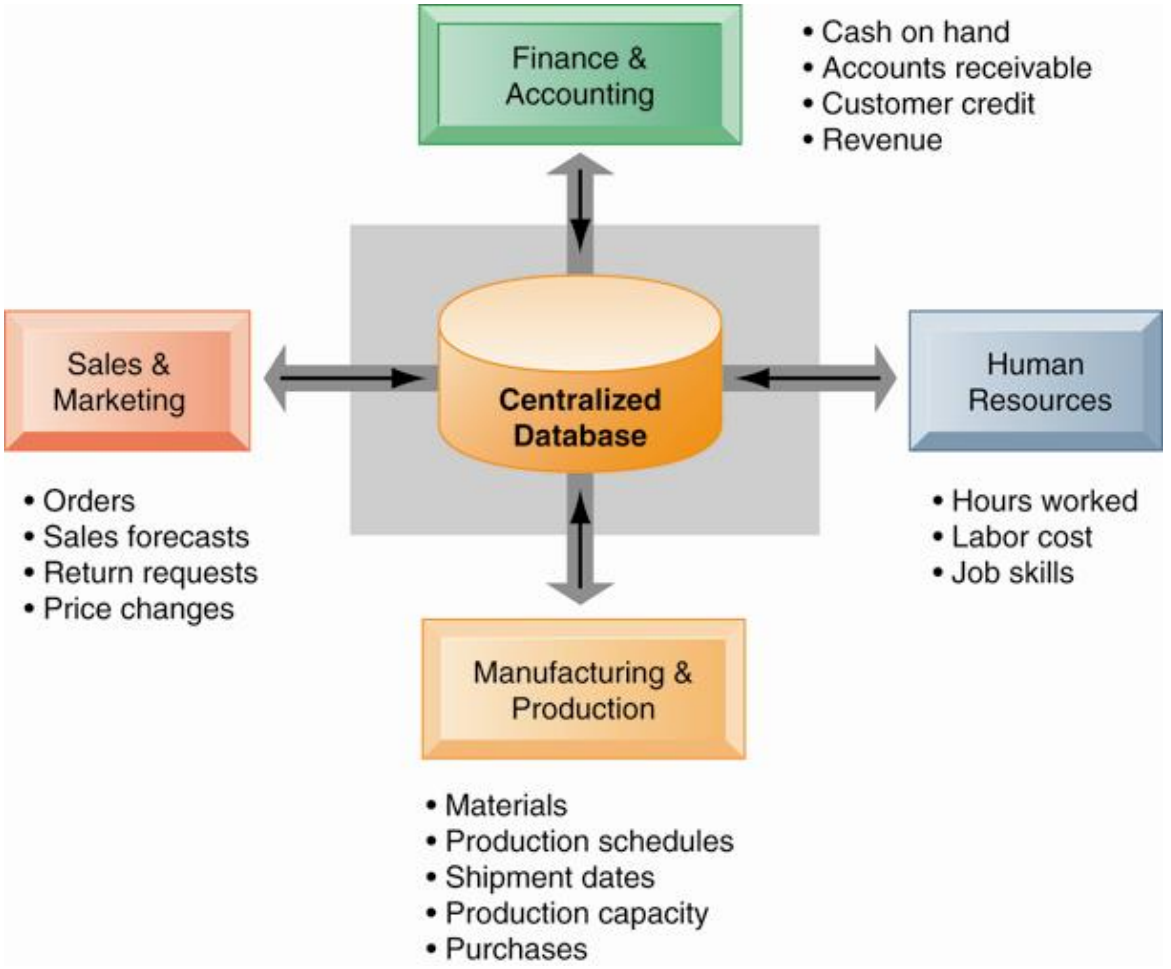
- Enterprise applications are:
  - any applications that span the enterprise, and types of enterprise applications include CRM, SCM, KMS and enterprise systems.

- Enterprise systems refers to
  - the larger database environment within which these applications reside and operate - are referred to in some first as “enterprise resource planning systems (ERP).

- **Enterprise systems (ERP)**
  - **Collects data from different firm functions and stores data in single central data repository**
  - **Resolves problem of fragmented data - integrates information flows from a variety of sources and serves a wide variety of groups and purposes in the firm**
  - **Enable:**
    - Coordination of daily activities
    - Efficient response to customer orders (production, inventory)
    - Help managers make decisions about daily operations and longer-term planning

How Enterprise Systems Work

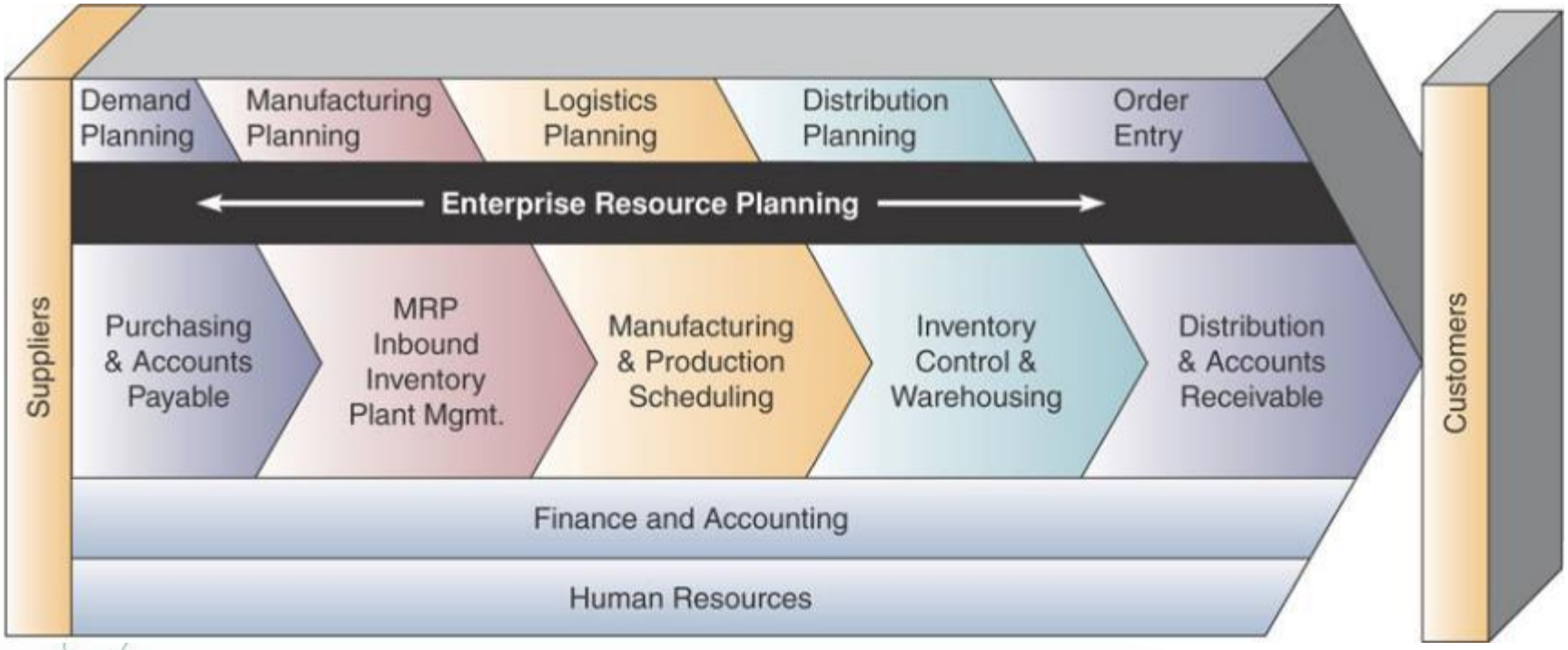
Enterprise systems feature a set of integrated software modules and a central database that enables data to be shared by many different business processes and functional areas throughout the enterprise



Enterprise Systems

- **Cross-functional enterprise system**
  - **Facilitates information flows**
    - Business
    - Supplier
    - Customer
- Old ERPs customized to fit individual needs
- Upgrades can’t be applied without testing and modification
- New ERPs have new features and capability
- Some companies stay with old systems
- Some companies buy new, but avoid customization

Business processes and functions of ERP



- **Business value of enterprise systems**
  - Increase operational efficiency
  - Provide firm-wide information to support decision making
  - Enable rapid responses to customer requests for information or products
  - Include analytical tools to evaluate overall organizational performance

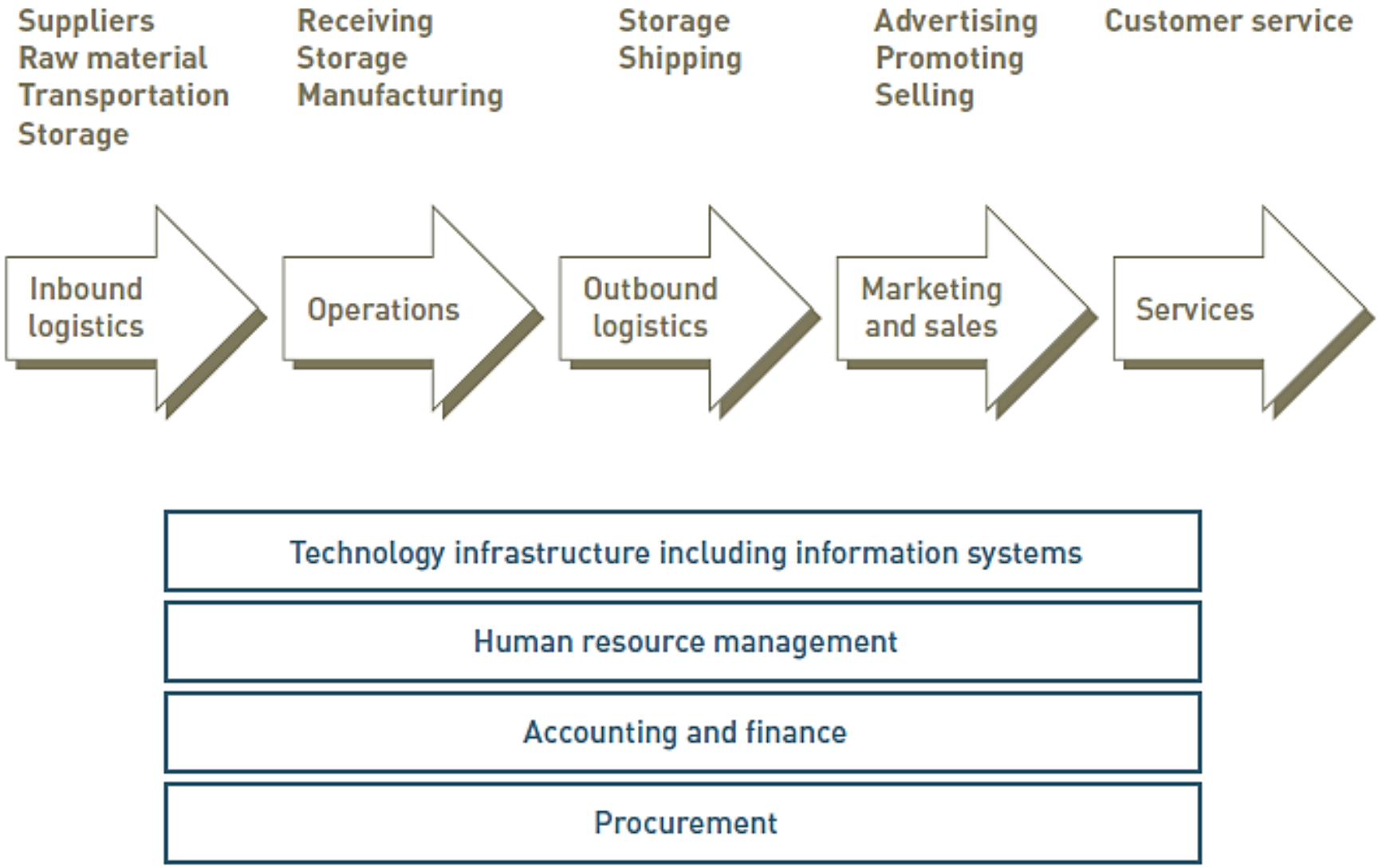
Supply Chain Management Systems

- **Supply chain management systems (SCM)**
  - **Manage firm's relationships with suppliers**
  - **Share information about:**
    - Orders, production, inventory levels, delivery of products and services

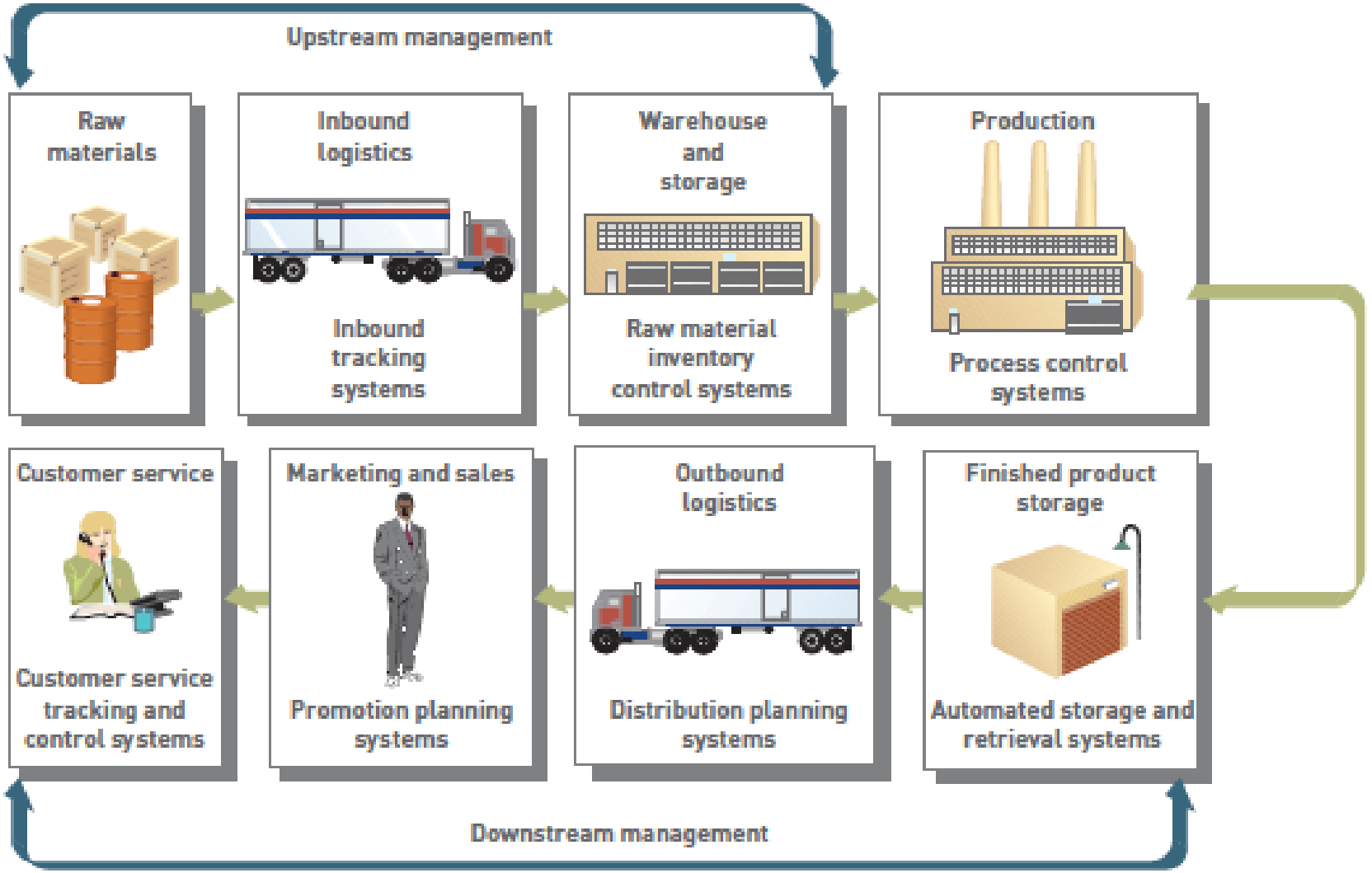
- **Helps a company**
  - Get the right products, To the right place, At the right time, In the proper quantity, At an acceptable cost

  - **Goal:**
    - Forecast demand, Control inventory, Enhance relationships, Receive feedback

Supply Chain



Supply Chain



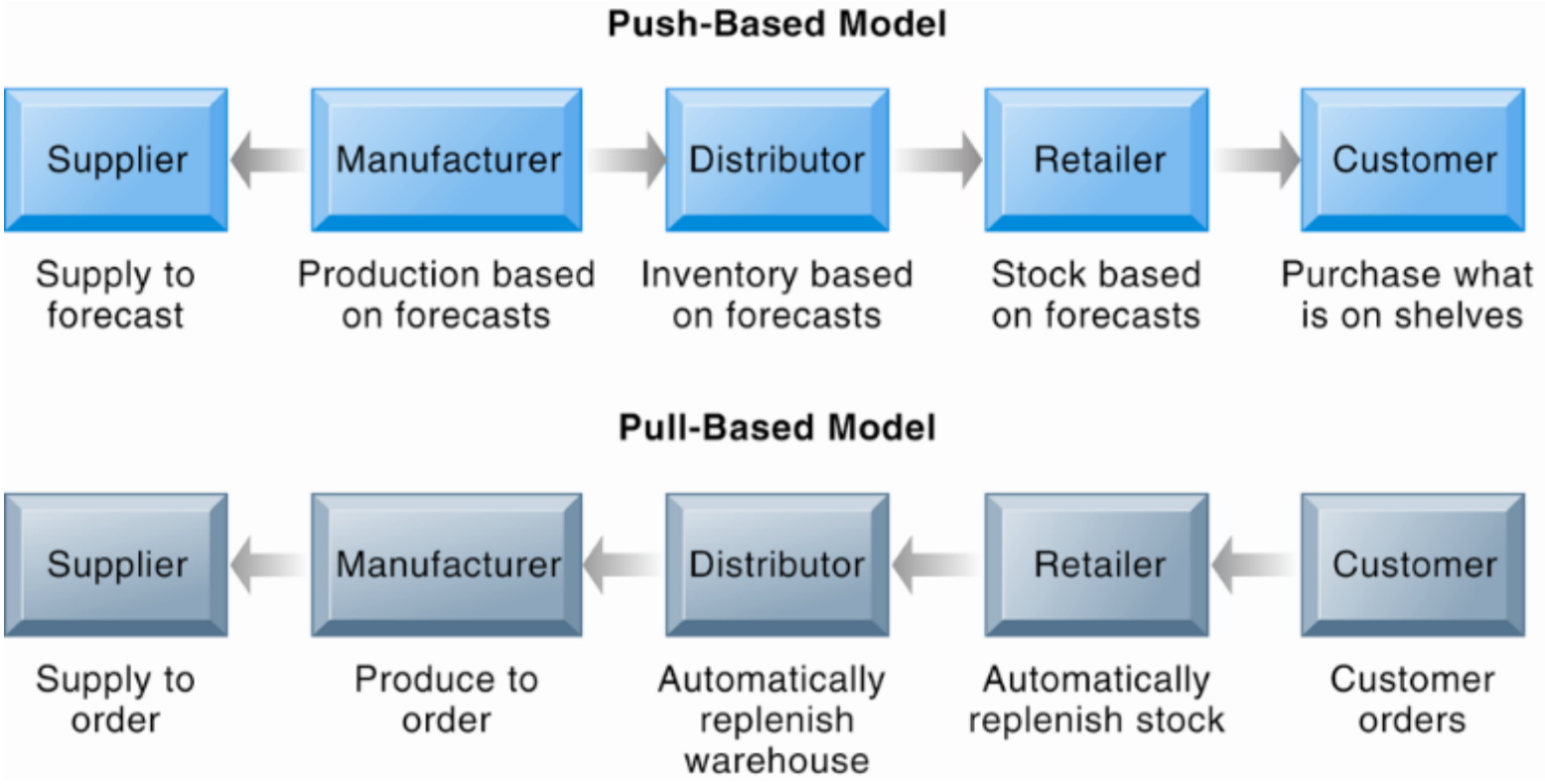
Supply Chain Management Systems

- **Supply Chain**
  - **Network of organizations and processes for:**
    - Procuring materials, transforming them into products, and distributing the products
  - **Upstream supply chain:**
    - Firm's suppliers, suppliers' suppliers, processes for managing relationships with them
  - **Downstream supply chain:**
    - Organizations and processes responsible for delivering products to customers
  - **Internal supply chain**

Supply Chain Management Systems

- **Supply chain management**
  - **Push-based model (build-to-stock)**
    - Earlier SCM systems
    - Schedules based on best guesses of demand
  - **Pull-based model (demand-driven)**
    - Web-based
    - Customer orders trigger events in supply chain
  - **Internet enables move from *sequential* supply chains to *concurrent* supply chains**
    - Complex networks of suppliers can adjust immediately

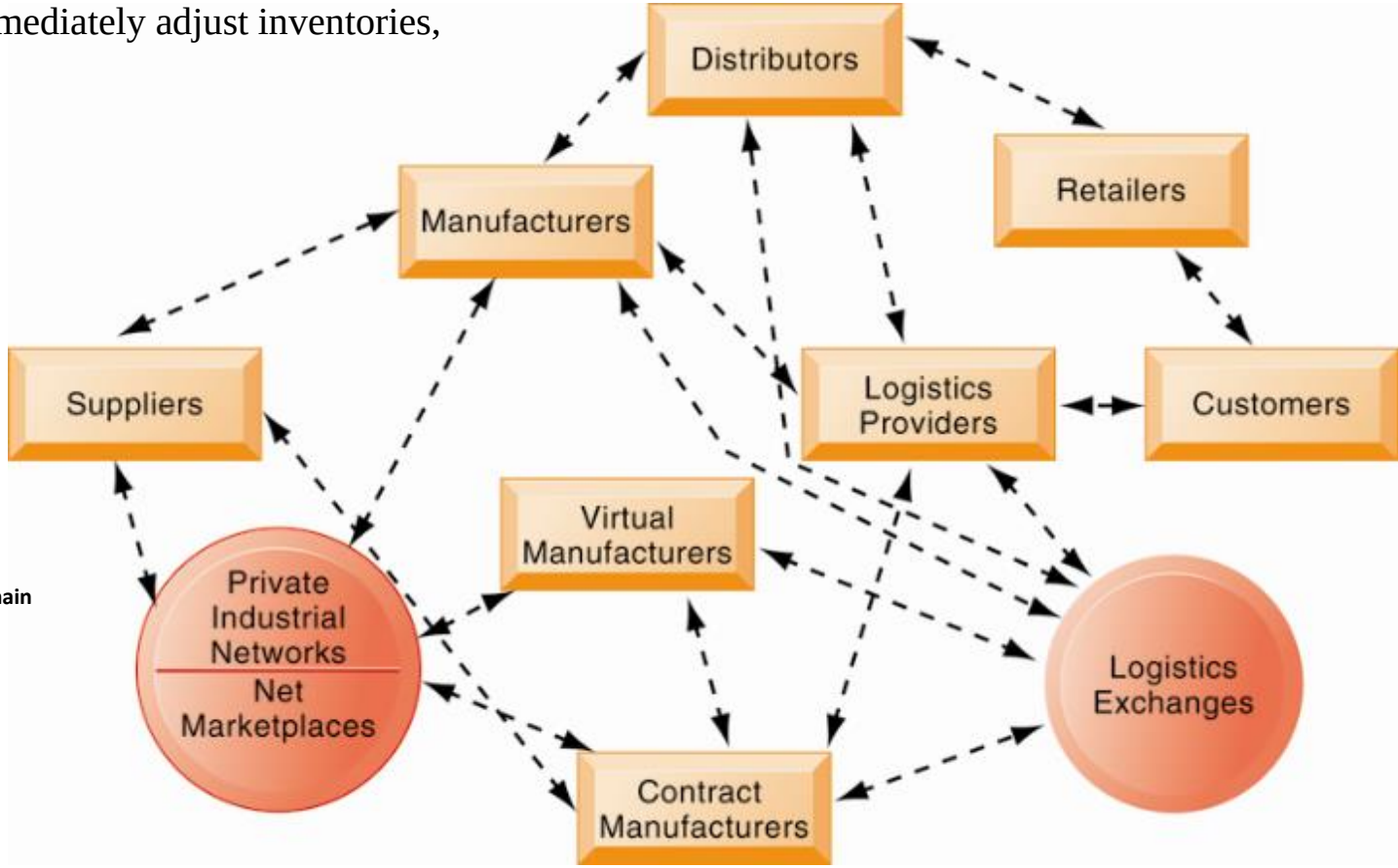
Push- Versus Pull-Based Supply Chain Models



The difference between push- and pull-based models is summarized by the slogan "Make what we sell, not sell what we make."

Supply Chain Management Systems

The future Internet-driven supply chain operates like a digital logistics nervous system. It provides multidirectional communication among firms, networks of firms, and e-marketplaces so that entire networks of supply chain partners can immediately adjust inventories, orders, and capacities.



The Future Internet-Driven Supply Chain

- **Customer relationship management systems (CRM)**
  - **Provide information to coordinate all of the business processes that deal with customers**
    - Sales
    - Marketing
    - Customer service
  - **Helps firms identify, attract, and retain most profitable customers with a Single, complete view of every customer**
  - **Customers have also have Single, complete view of the company**

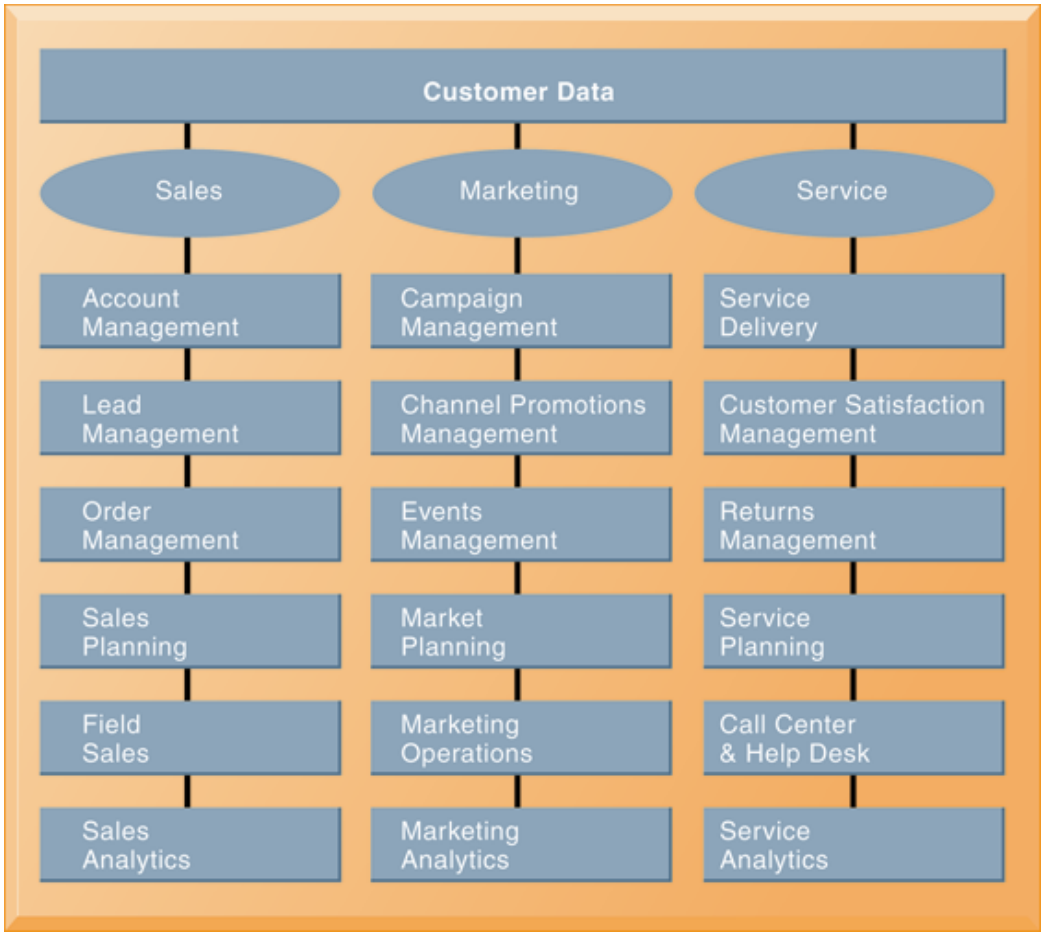
- **Customer focused**
  - **Customer relationships – most valued asset**
  - **Find and retain most profitable customers possible**

Customer Relationship Management (CRM)

CRM systems examine customers from a multifaceted perspective. These systems use a set of integrated applications to address all aspects of the customer relationship, including customer service, sales, and marketing.

Customer Relationship Management (CRM)

The major CRM software products support business processes in sales, service, and marketing, integrating customer information from many different sources. Included are support for both the operational and analytical aspects of CRM.

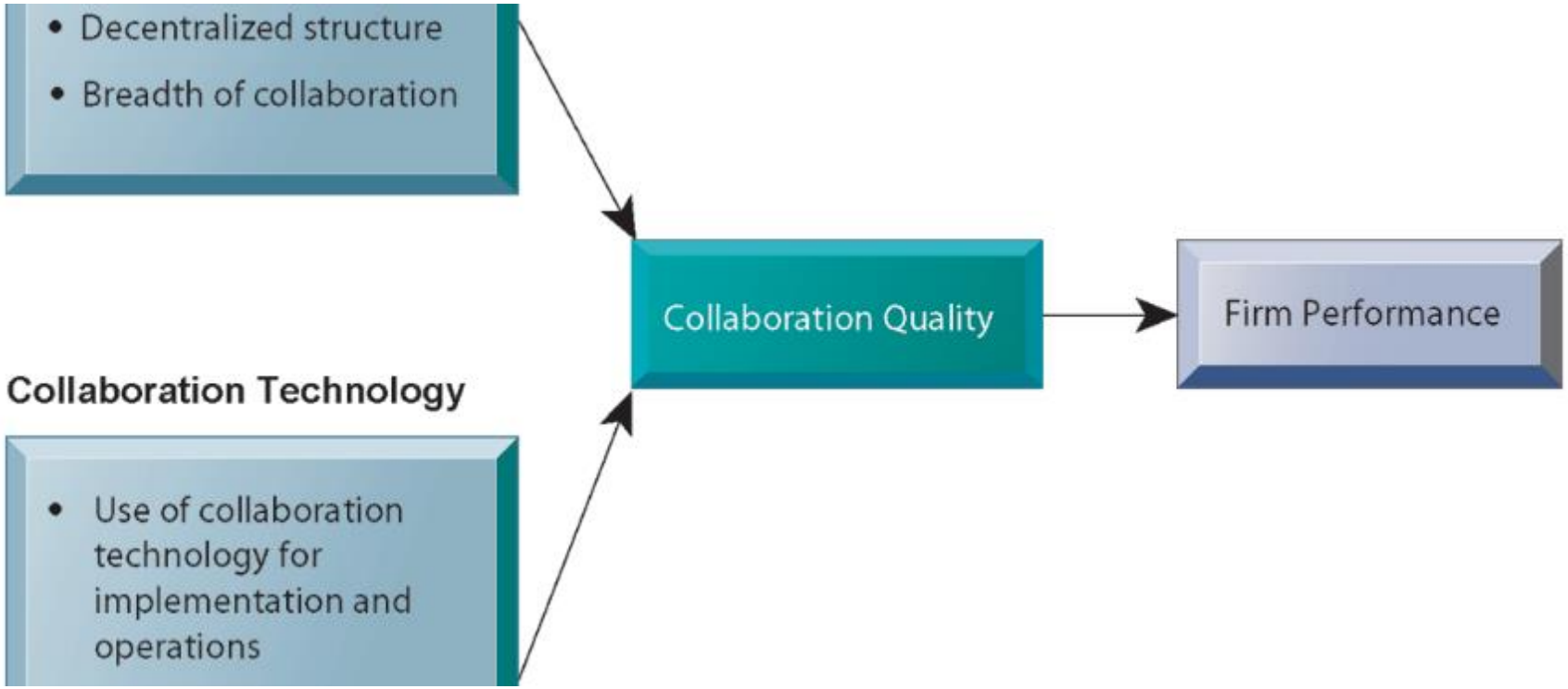


CRM Software Capabilities

- **Collaboration**
  - Short-lived or long-term
  - Informal or formal (teams)
- **Growing importance of collaboration**
  - Changing nature of work
  - Growth of professional work—“interaction jobs”
  - Changing organization of the firm
  - Changing scope of the firm
  - Emphasis on innovation
  - Changing culture of work

- **Social business**
  - **Use of social networking platforms, internal and external**
  - **Engage employees, customers, and suppliers**
  - **Goal is to deepen interactions and expedite information sharing**
  - **"Conversations"**
  - **Requires information transparency**
    - Driving the exchange of information without intervention from executives or others

- **Business benefits of collaboration and teamwork**
  - **Investments in collaboration technology can bring organization improvements, returning high ROI**
  - **Benefits:**
    - Productivity
    - Quality
    - Innovation
    - Customer service
    - Financial performance
      - Profitability, sales, sales growth



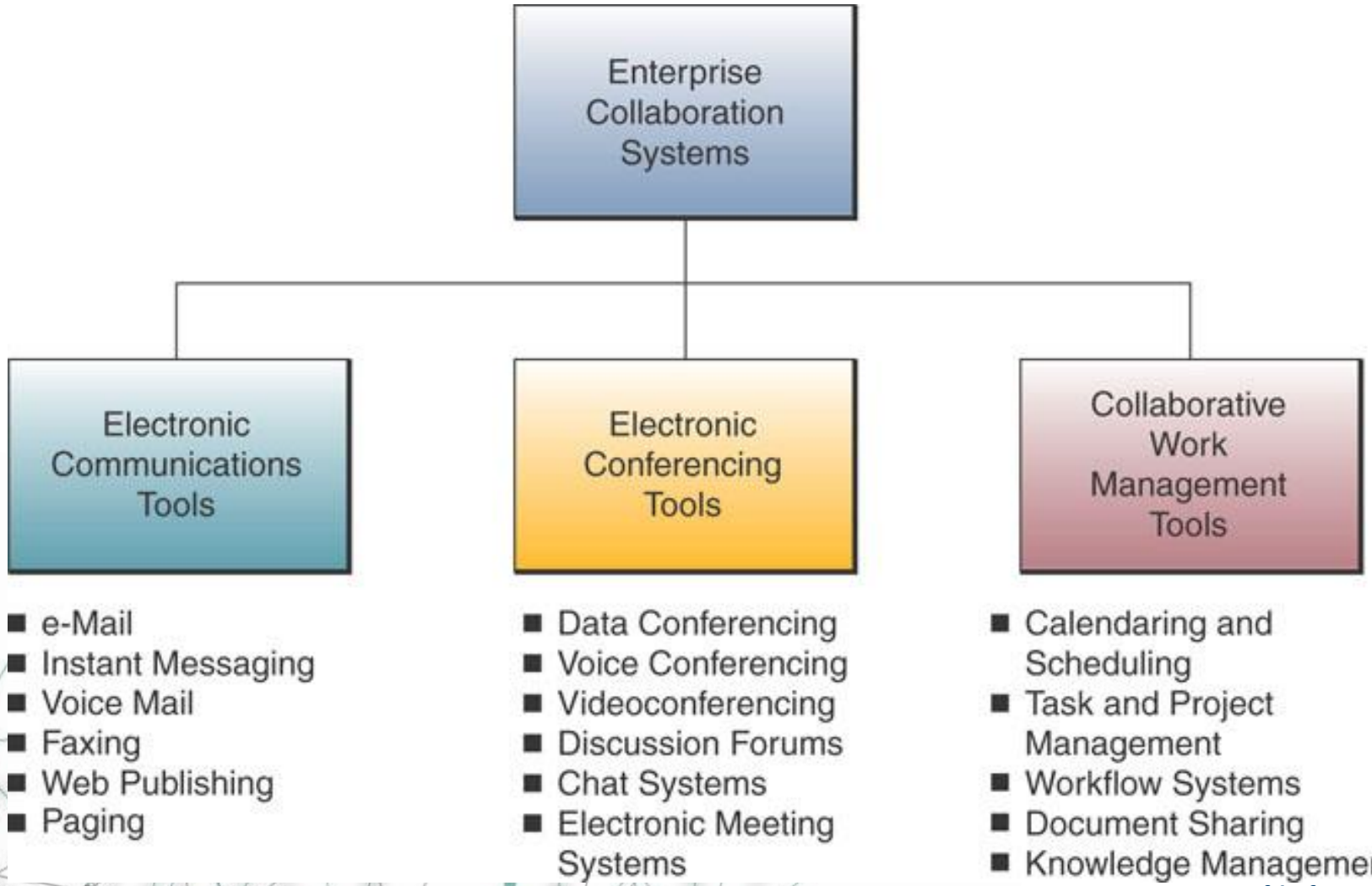
Requirements for Collaboration

Successful collaboration requires an appropriate organizational structure and culture, along with appropriate collaboration technology.

- **Building a collaborative culture and business processes**
  - **"Command and control" organizations**
    - No value placed on teamwork or lower-level participation in decisions
  - **Collaborative business culture**
    - Senior managers rely on teams of employees.
    - Policies, products, designs, processes, and systems rely on teams.
    - The managers purpose is to build teams.

- **Tools for collaboration and teamwork**
  - **E-mail and instant messaging**
  - **Wikis**
  - **Virtual worlds**
  - **Collaboration and social business platforms**
    - Virtual meeting systems (telepresence)
    - Google Apps/Google sites
    - Cyberlockers
    - Microsoft SharePoint
    - Lotus Notes
    - Enterprise social networking tools

Enterprise Collaboration Systems -ECS Tools



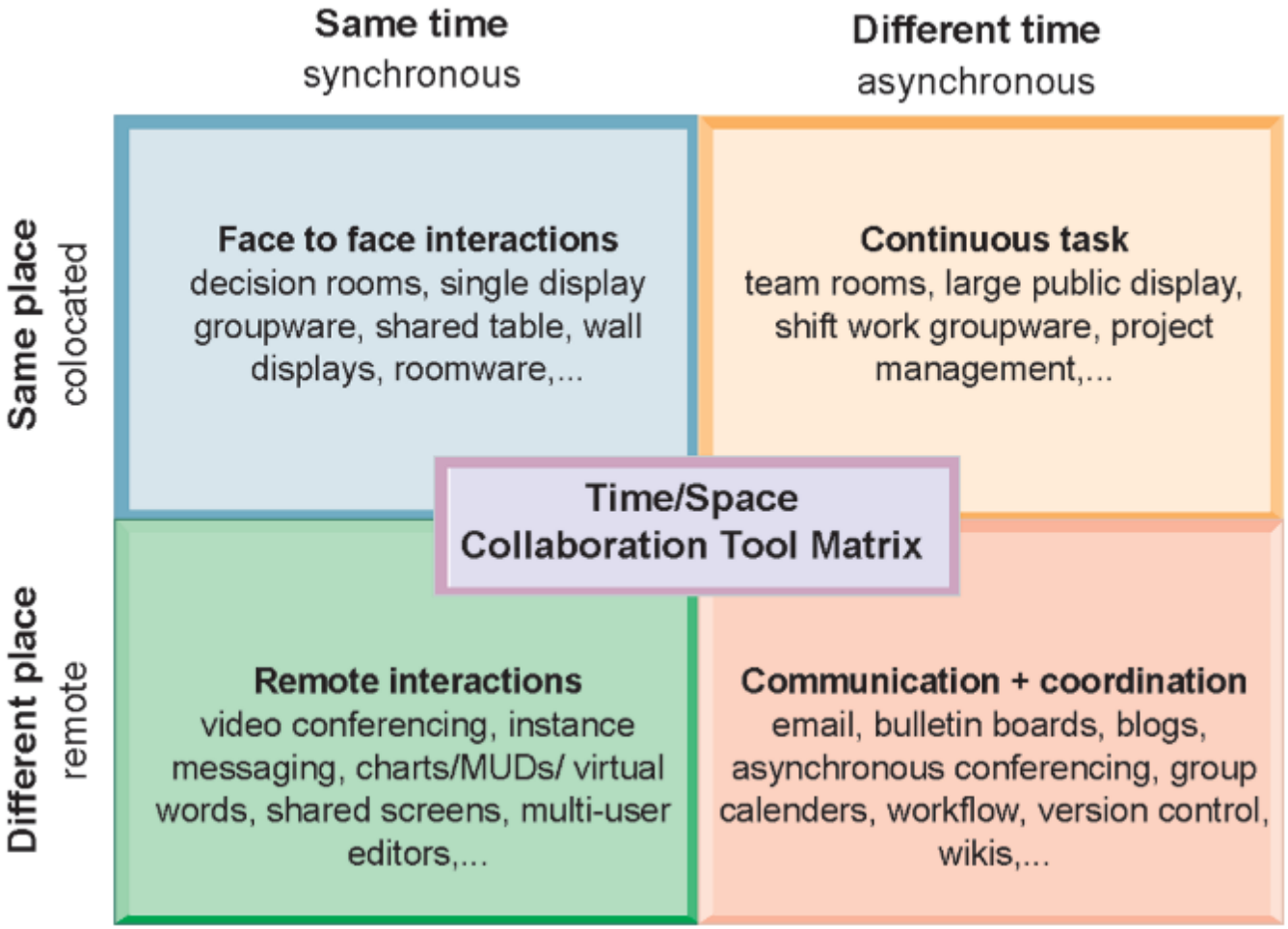
Exploring Virtual Worlds

- Virtual world - training
  - Rollovers
  - Multicar pileups
  - Life threatening injuries
  - Police training
  - Military use

- **Enterprise social networking software capabilities**
  - Profiles
  - Content sharing
  - Feeds and notifications
  - Groups and team workspaces
  - Tagging and social bookmarking
  - Permissions and privacy

- **Two dimensions of collaboration technologies**
  - Space (or location)—remote or co-located
  - Time—synchronous or asynchronous
- **Six steps in evaluating software tools**
  1. What are your firm's collaboration challenges?
  2. What kinds of solutions are available?
  3. Analyze available products' cost and benefits.
  4. Evaluate security risks.
  5. Consult users for implementation and training issues.
  6. Evaluate product vendors.

The Time/Space Collaboration Tool Matrix



Collaboration technologies can be classified in terms of whether they support interactions at the same or different time or place or whether these interactions are remote or co-located.

Bibliography

Adapted from:

- Management Information Systems: Managing the Digital Firm, 12/E, Kenneth C. Laudon, New York University and Jane P. Laudon, Azimuth Information Systems, 2012.
- Management Information Systems 10th ed, James O'Brien, George Marakas, McGraw-Hill/Irwin, 2010.