Lesson 6

Enterprise Information Systems (SCM/CRM/ERP)

Learning Objectives

1. Explain how organizations support business activities by using information technologies across the enterprise.

1. Explain the functional flow of goods and services within an organization.

1. Describe Supply Chain Management (**SCM**), Customer Relationship Management (**CRM**), and Enterprise Resource Planning (**ERP**) Systems.

1. Describe how they relate to the Value Chain.

System Categories Enterprise Systems

Enterprise - Wide Systems

Also known as Enterprise Systems, these systems that enable companies to integrate information across operations on a company-wide basis

Inter - Organizational Systems (IOS)

Systems that communicate across organizational boundaries with the goal of streamlining information flow from one company to another

Enterprise Resource Planning and Value Creation

An **Enterprise Resource Planning** is central to an organization

Ensure information can be shared across all business functions and all levels of management to support the running and managing of a business

The ultimate goal is to satisfy customers and provide a competitive advantage by reducing costs and improving service

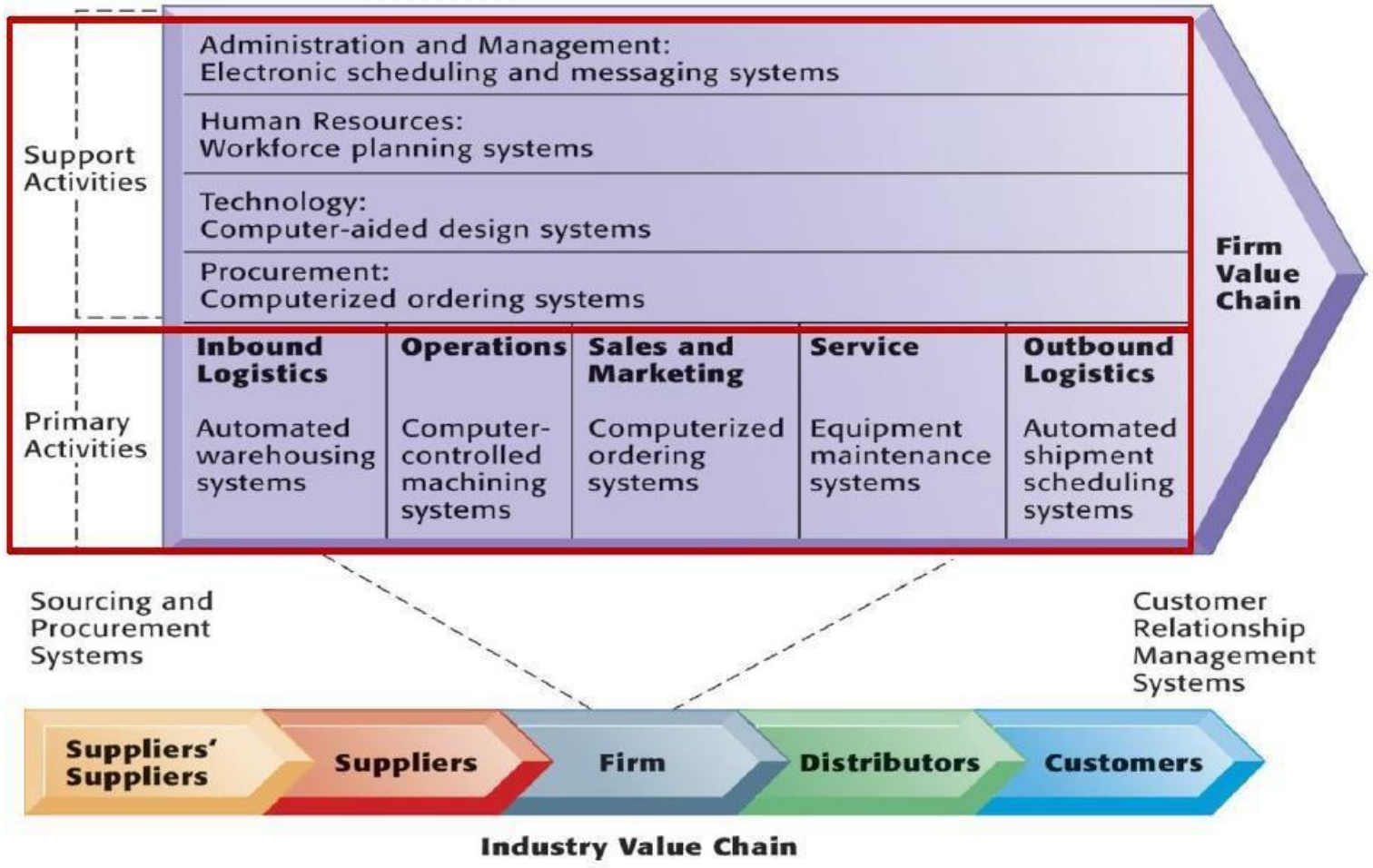
Create Value transform inputs into outputs valued by the customer Organizations create value by performing activities at lower cost or enhancing differentiation of products or services. Information Systems streamline the processing of those activities

Business Value Chain

Managing materials, services and information from suppliers through to manufacturing, distribution, and end customers.

Business Value Chain Analysis

Value Chain Analysis
(Porter, 1985, 2001)
is a process of analyzing activities to determine where value is added to products and/or services and what costs are incurred in doing so



The Business Value Chain - Primary Activities

Functional areas within an organization that process inputs and produce outputs . These activities may vary widely based on the unique requirements of the organization

Primary Activities include:

- **Inbound Logistics**: Receiving and Stocking raw materials, parts, products
- **Operations/Manufacturing**:Processing orders and Raw materials into finished product
- **Outbound Logistics**: Distribution of the finished product to customers.
- **Marketing and Sales**: Creating demand for the product (pre-sales activities).
- **Customer Service**: Providing support for the product or customer (post-sales activities).

The Business Value Chain - Support Activities

Support activities are business activities that enable Primary Activities. These activities can be unique by industry but are generally more typical across industries.

Support Activities include:

- **Infrastructure**: Hardware and software that support applications for primary activities.
- **Human Resources**: Employee management activities, including hiring, interview scheduling, and benefits management.
- **Technology Development**: The design and development of applications that support the organization.
- **Procurement**: Purchasing goods or services required as inputs to primary activities.

Information Systems Roles in the Value Chain

Systems play a significant role throughout the Value Chain to achieve competitive advantage and:

- **Must align with the business strategy** (e.g., cost leadership, differentiation).
- **Are often integrated with Business Process Reengineering**, which focuses on improving processes to enhance company operations."

Information Systems Roles in the Value Chain

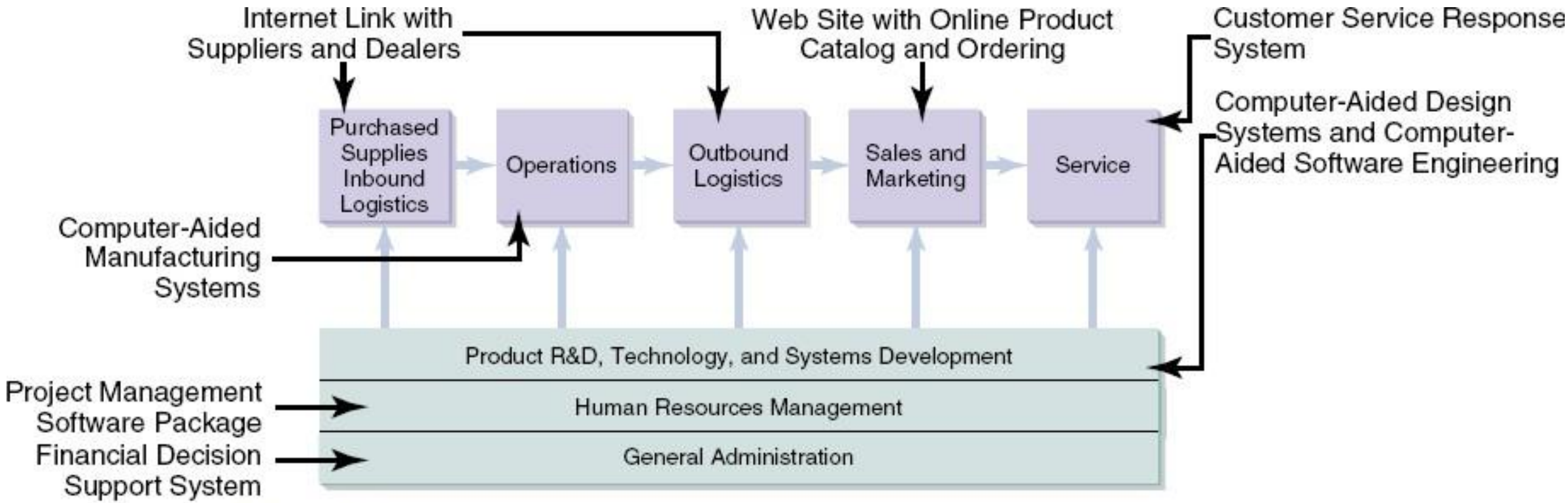
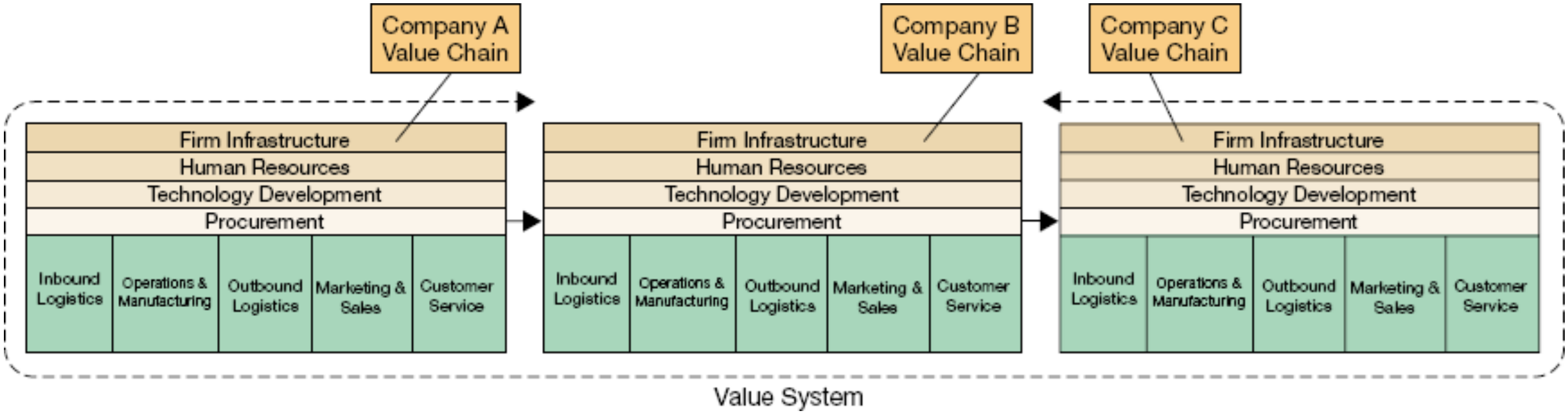


Figure 2.6 ➥ Sample value chain and corresponding sample uses of information systems to add value.

A Business Value System Organizational Focus



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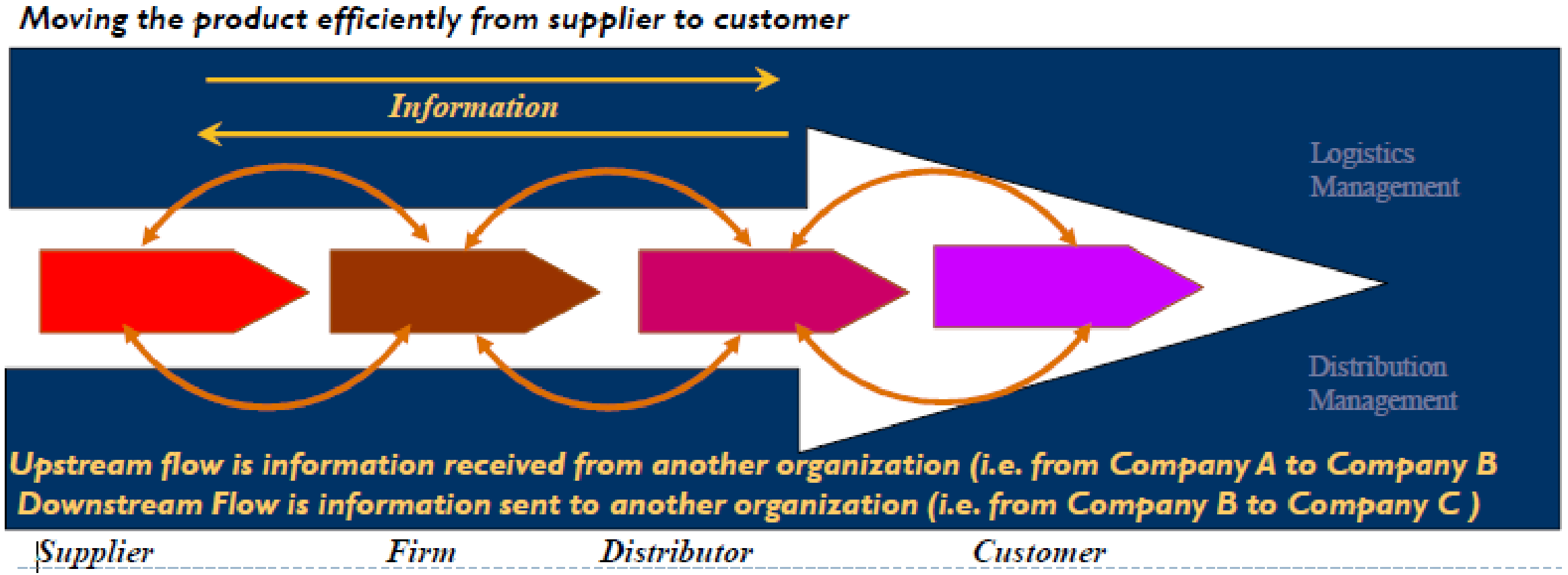
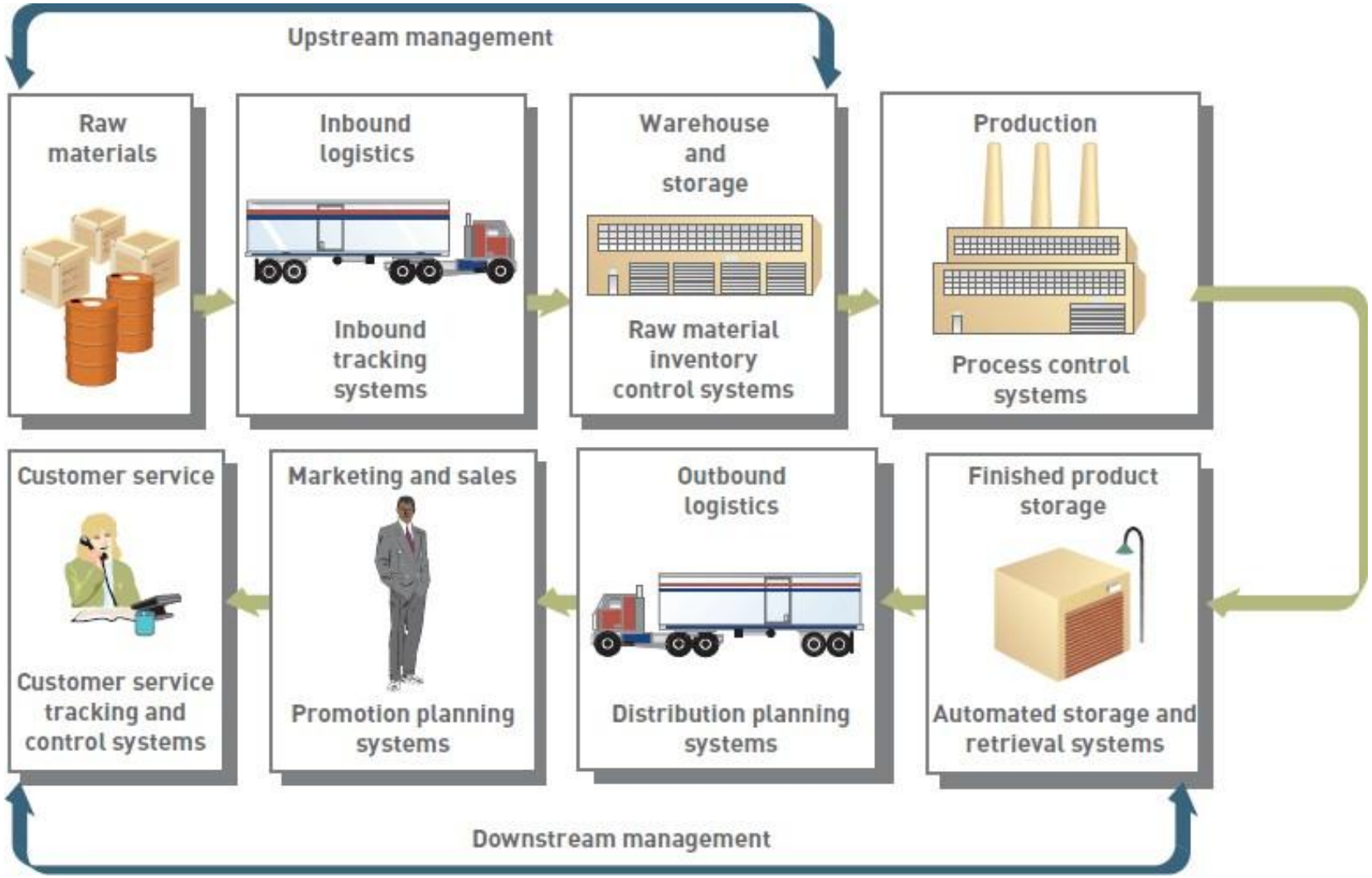


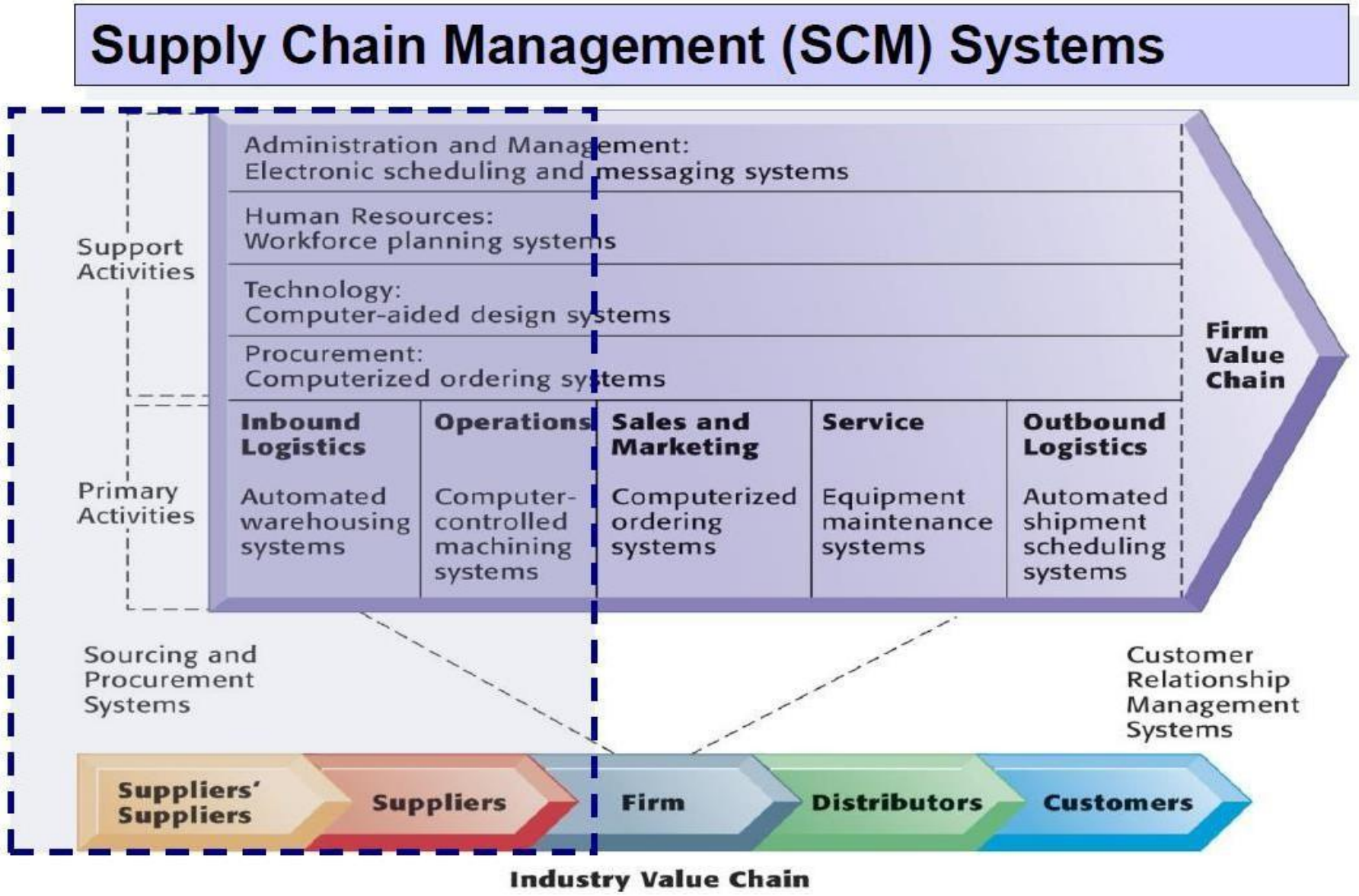
A Business Value System Organizational Focus



Supply Chain Management (SCM) Systems

Managing materials, services, and information from suppliers through to **manufacturing, distribution, and end customers.**

Information Systems Roles in the Value Chain



Supply Chain Management (SCM)

Supply Chain: flow of materials, services and information from suppliers of merchandise and raw materials through to the customers

Supply Chain Management: processes and procedures used to ensure the delivery of goods and services to customers at the lowest cost while providing highest value to the customers

Supply Chain Management (SCM)

Objective:
Applications that accelerate product development and reduce costs associated with procuring raw materials, components, and services from suppliers.

Supply Chain:
The suppliers that an organization purchases from directly.

Supply Network:
Includes both direct suppliers and their suppliers.

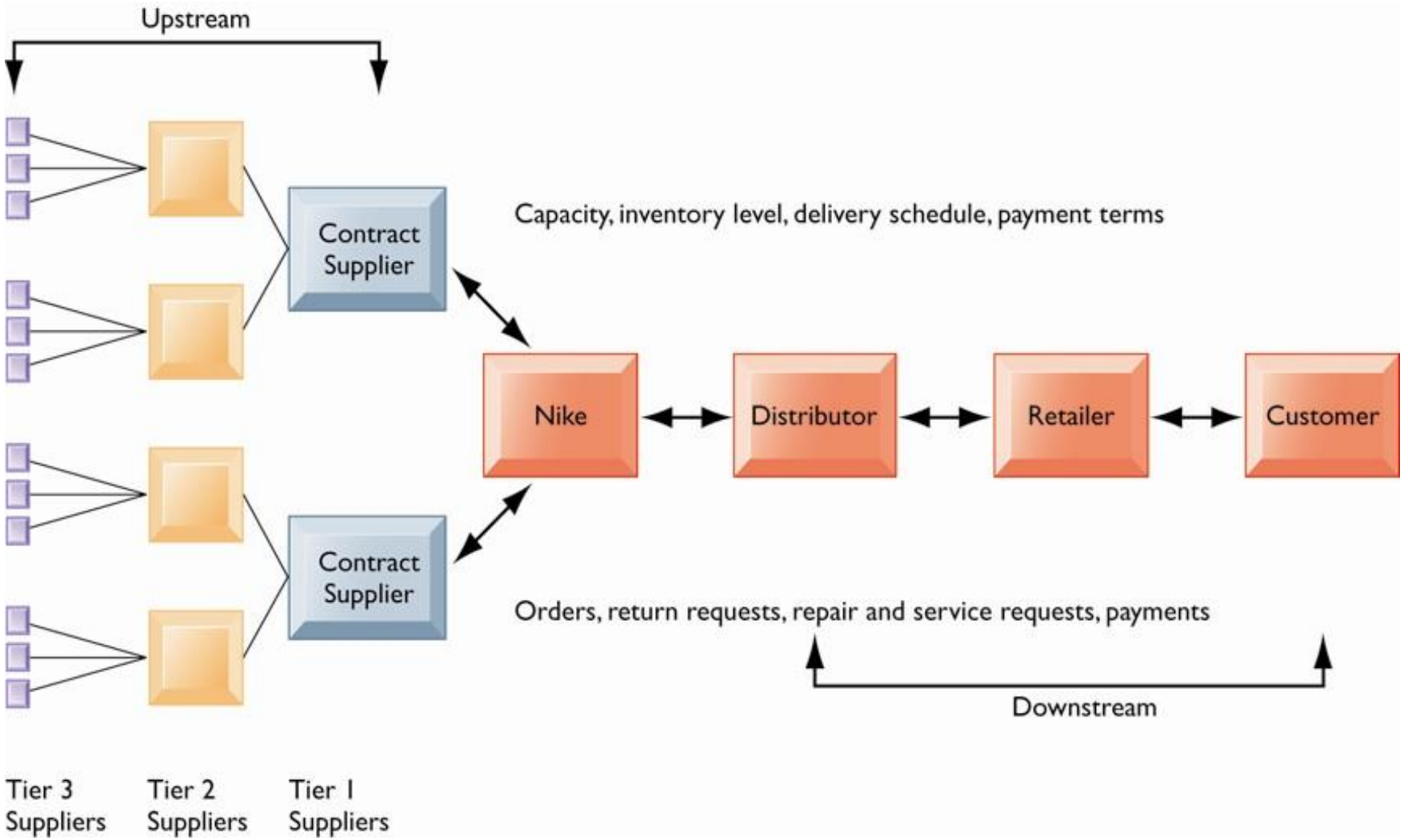
Sources:
There are two primary sources of SCM systems. These systems are built to tightly integrate with ERP systems:

1. **SCM Software Vendors** – Agile, Ariba, i2, Manugistics, Commerce One, etc.
2. **ERP Vendors** – SAP, Baan, Oracle, etc.

Supply Chain Management (SCM)

Supply Chain: The flow of materials, services, and information from suppliers of merchandise and raw materials through to customers.

Supply Chain Management (SCM): The processes and procedures used to ensure the efficient delivery of goods and services to customers at the lowest cost while maximizing value.



Example of SCM and ERP Offering

SCM and ERP software applications capabilities include the following:

Capability	Explanation
Planning	Enables you to model supply chains by providing comprehensive planning capabilities, including supply chain design, demand and supply planning, manufacturing planning, and transportation planning
Execution	Integrates planning, promising, logistics, and transactional systems through materials management, manufacturing execution, order promising, transportation execution, and warehouse management—augmented with radio frequency identification (RFID) technology
Coordination	Lets you monitor and analyze processes both within and outside your company by providing supply chain event management and supply chain performance management
Collaboration	Enables you to share information and set and achieve common supply chain goals through collaborative planning, forecasting, and replenishment (CPFR), support for vendor-managed inventory (VMI), and support for supplier-managed inventory (SMI)

Supply Chain Management Benefits

Supply Chain Management applications can help organizations to gain **competitive advantage** and provide substantial **payback** in several ways by:

Streamlining Workflow & Increasing Employee Productivity

- Efficiently managing business travel, time, and expenses
- Enabling real-time collaboration with suppliers

Accelerating Product Development

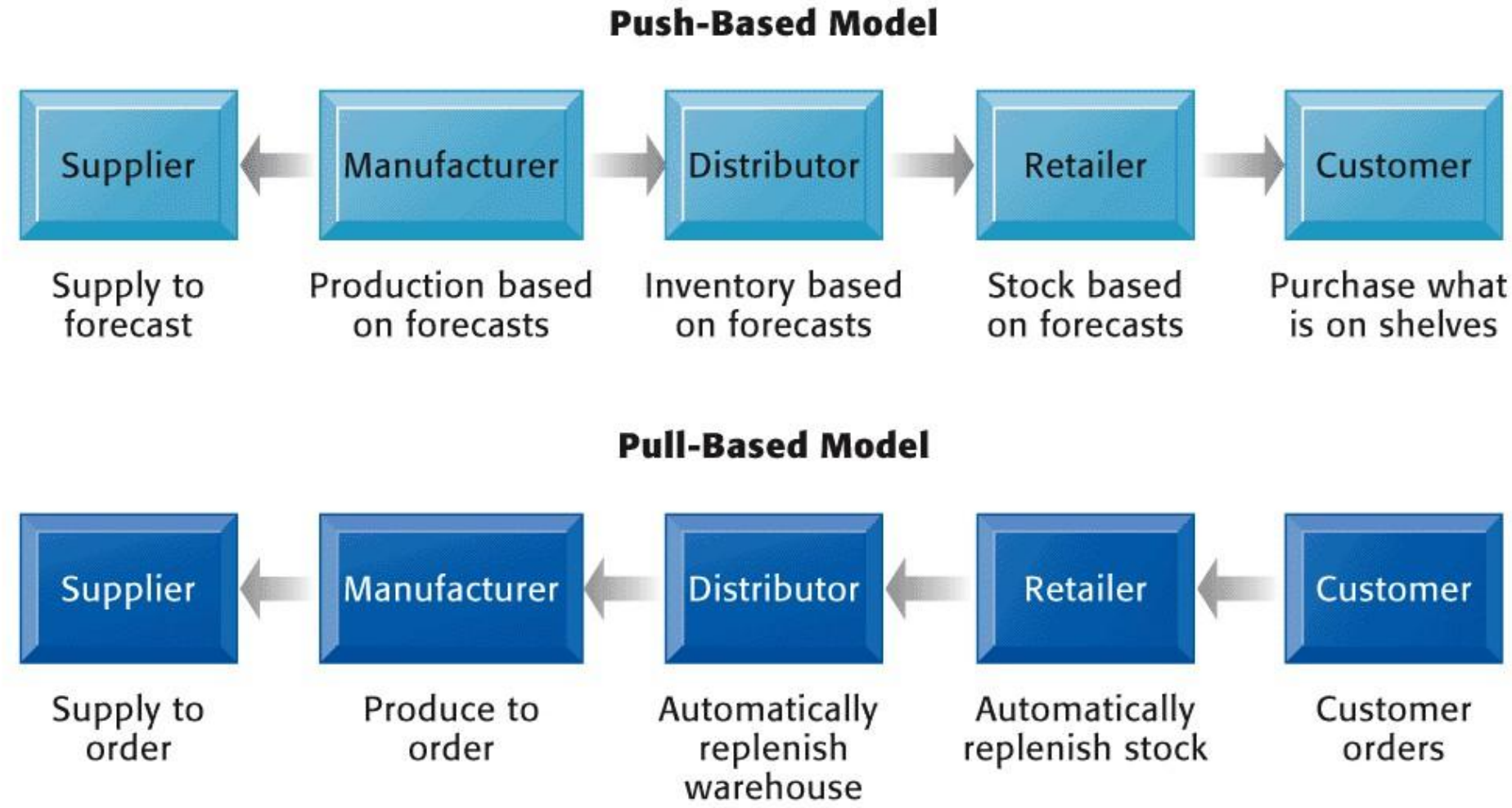
- Allowing organizations to swiftly react to market conditions
- Reducing time-to-market for new products

Reducing Costs & Creating Efficiencies Across the Supply Network

- Supporting contract negotiation
- Measuring and optimizing the effectiveness of supplier agreements

Supply Supply Chain PUSH vs PULL Based Models Network

The difference between push- and pull -based models is summarized by the slogan



The Supply Network

Push-based model

- Based on forecasted demand, production and distribution are planned in advance.
- Suppliers produce goods in anticipation of customer demand to assure an ability to fulfill orders.

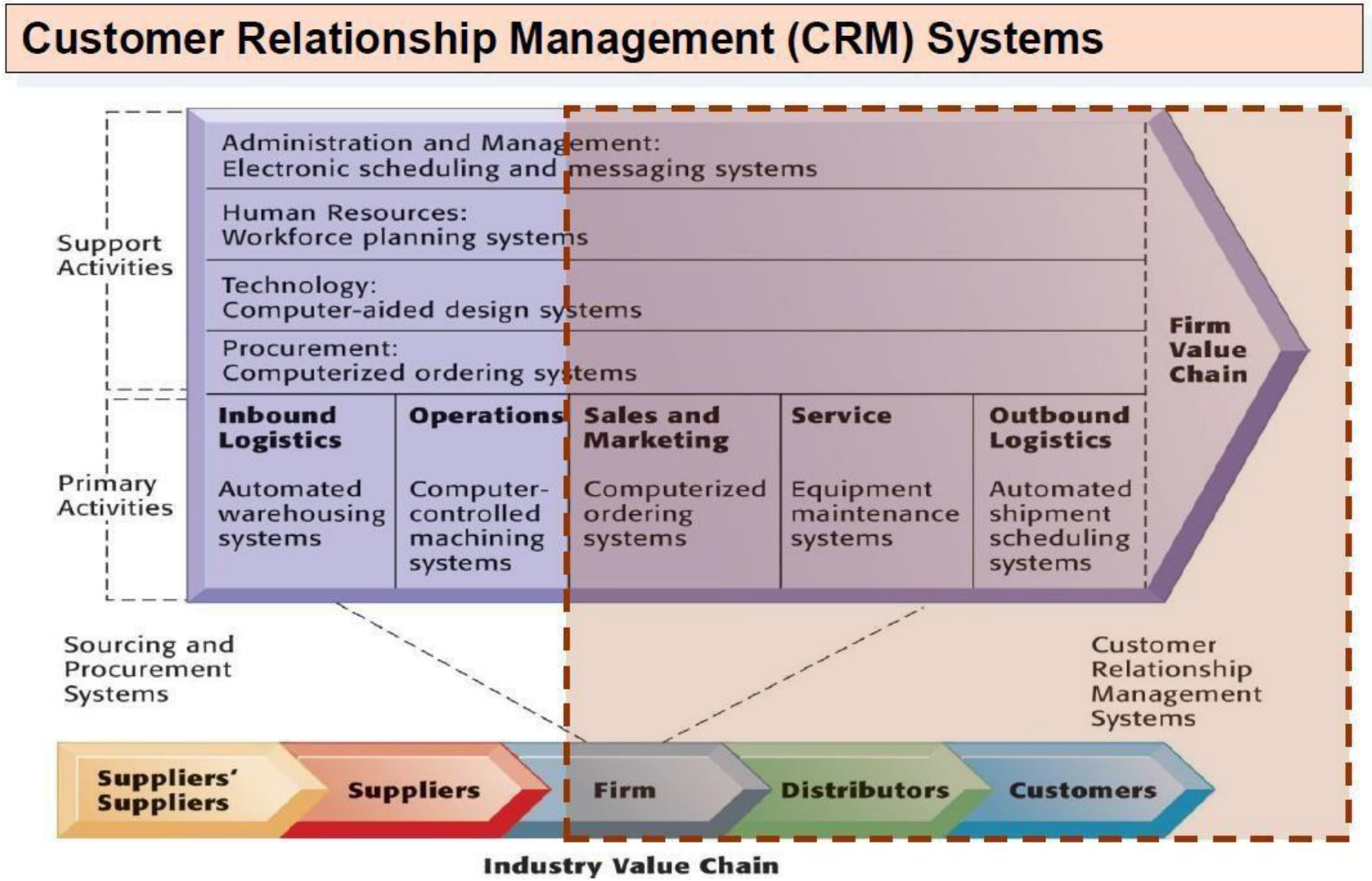
Pull-based model

- Supply chain driven by actual customer orders or purchases.
- Producing organization opens its systems to the customer, allowing them to view inventory and production levels before placing orders.

Customer Relationship Management (CRM) Systems

Managing materials, services, and information from suppliers to customers efficiently to improve relationships and drive business growth.

Information Systems Roles in the Value Chain



Customer Relationship Management (CRM) Systems

Capture and **integrate** customer data from all over the organization

Consolidate and **analyze** the data

Distribute results to various systems and customer touch points across the enterprise

Provide a single touch point for the customer.

CRM Systems

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.

CRM Systems

Business Value of Customer Relationship Management Systems

Increased customer satisfaction

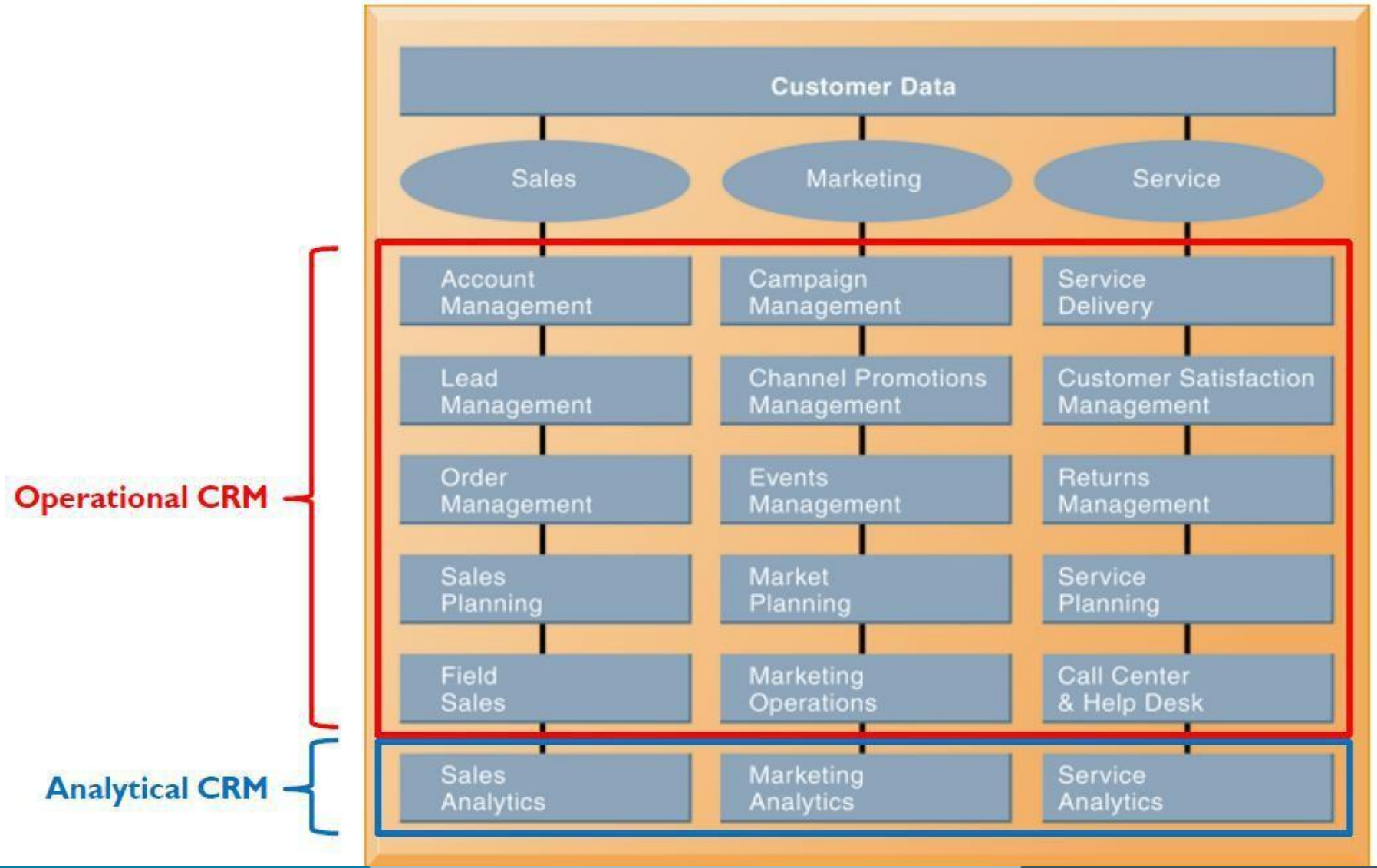
More effective marketing and reduced direct marketing costs

Lower costs for customer acquisition and retention

Increased revenue from identifying most profitable customer and segments for marketing, cross-selling, up-selling

Reduced churn rate (Number of customers who stop using or purchasing products or services from a company)

Operational and Analytical CRM



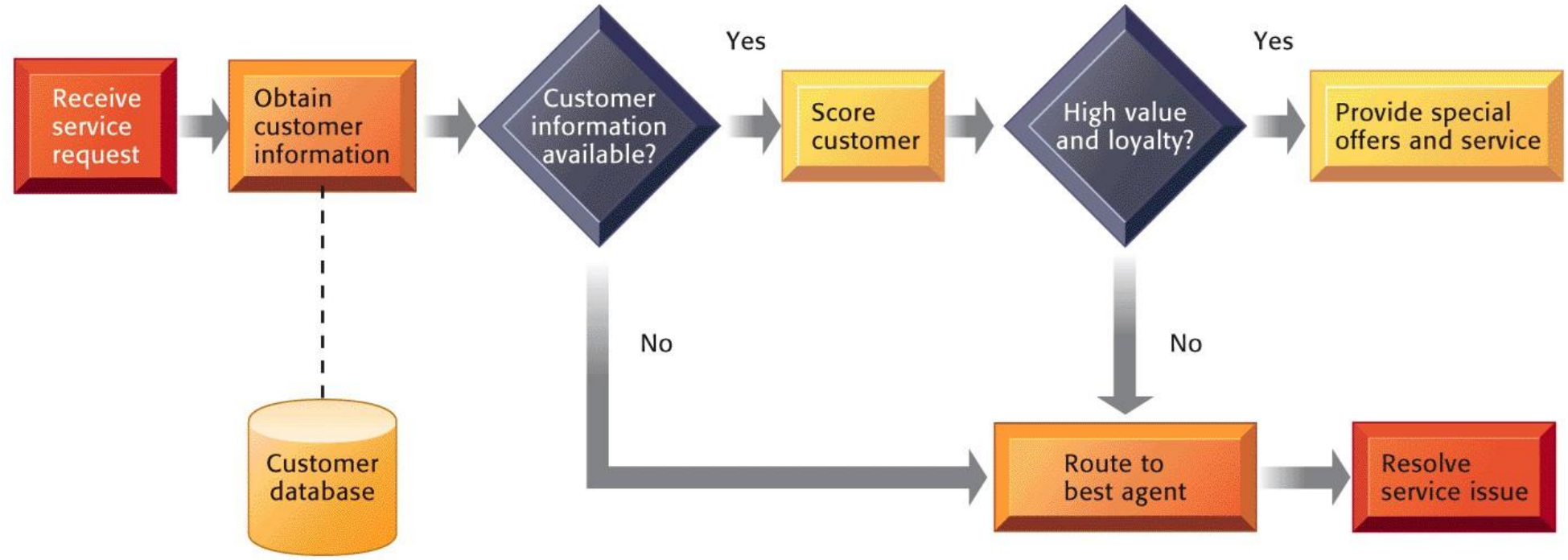
Operational CRM Systems

Customer-facing applications, such as sales force automation, call centre and customer service support, and marketing automation

Examples:
Campaign management loyalty programs (Air Miles), e-marketing, account and contact management, lead management, telemarketing, teleselling, e-selling, field sales

Operational CRM Systems

FIGURE 14-13 *Customer loyalty management process map*



This process map shows how a best practice for promoting customer loyalty through customer service would be modelled by customer relationship management software. The CRM software helps firms identify high-value customers for preferential treatment.

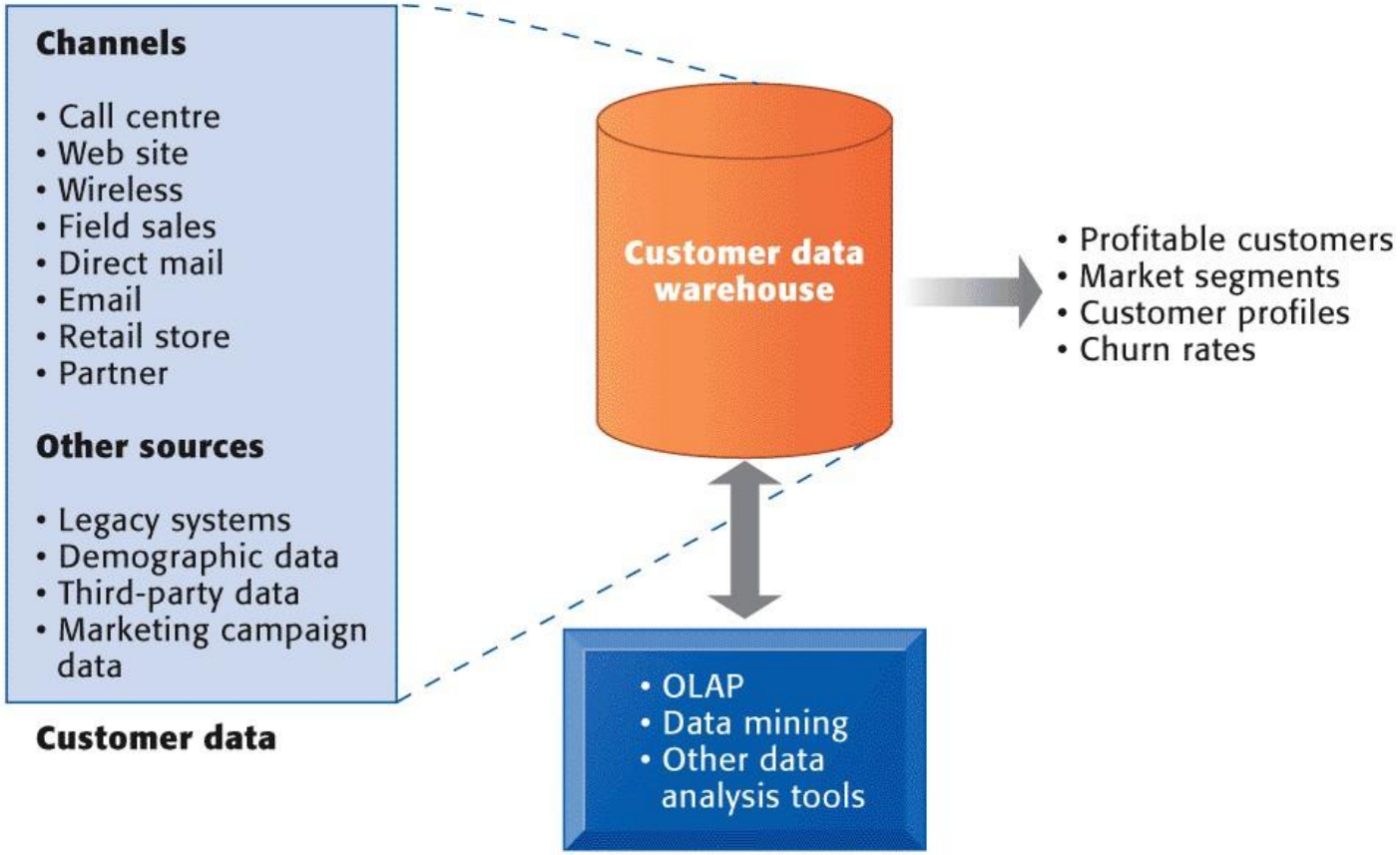
Analytical CRM Systems

Applications that analyze customer data generated by operational CRM applications to provide information for improving business performance

Examples:
Develop customer segmentation strategies and customer profiles; analyze customer or product profitability; identify trends in sales length cycle; analyze leads generated and conversion rates

Analytical CRM Systems

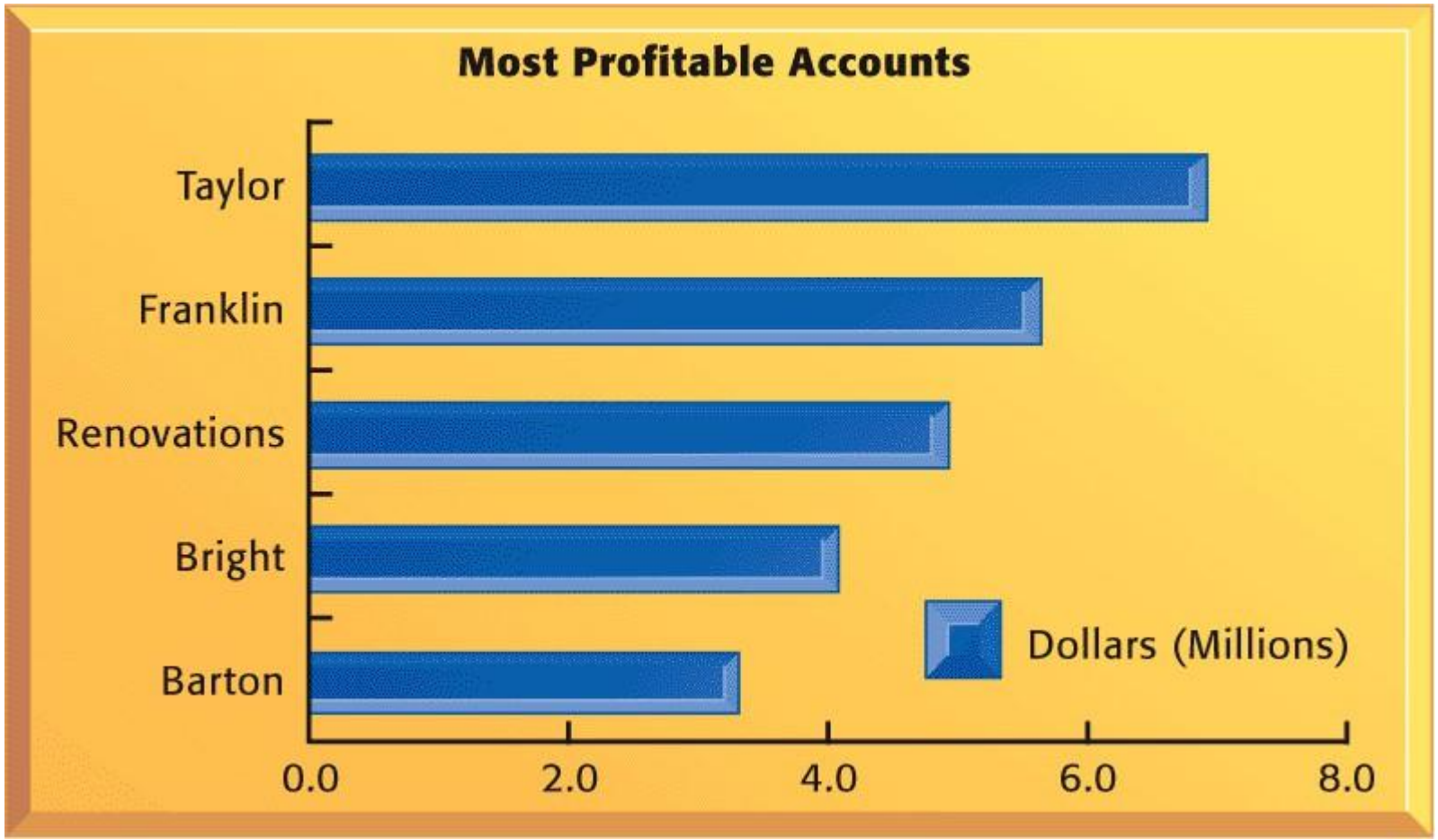
FIGURE 14-14 *Analytical CRM data warehouse.*



Analytical CRM uses a customer data warehouse and tools to analyze customer data collected from the firm's customer touch points and from other sources.

Analytical CRM Systems

Analytics : Help identify the most important customers, predict future buying patterns, and position the correct resources to increase sales



Analytical CRM Systems

CRM Performance Measurement

Metrics for may include:

- Cost per lead
- Cost per sale
- Number of repeat customers
- Reduction of churn
- Sales closing rate

Customer Lifetime Value (CLTV):

Difference between **revenues** and **expenses,** minus the cost of promotional marketing used to retain an account.

CRM Software

- Can range from niche tools to large-scale enterprise applications
- Can link to other major enterprise applications, such as supply chain management

CRM Performance Measurement

Integrated Portal CRM

CRM Systems

Extending Enterprise Software

More web-centric, so that core systems can work with extended supply chains, CRM, and new B2C and B2B e-commerce models

Service Platforms and Business Process Management

Integration of multiple applications from multiple business functions, business units, or business partners to deliver a seamless experience for the customer, employee, manager, or business partner

CRM Systems

- **Business Process Management**: Managing and optimizing business processes continuously to remain competitive.

- **Portals**: Frameworks for building composite services and integrating information from enterprise applications and in-house legacy systems.

CRM Systems

Management Opportunities:

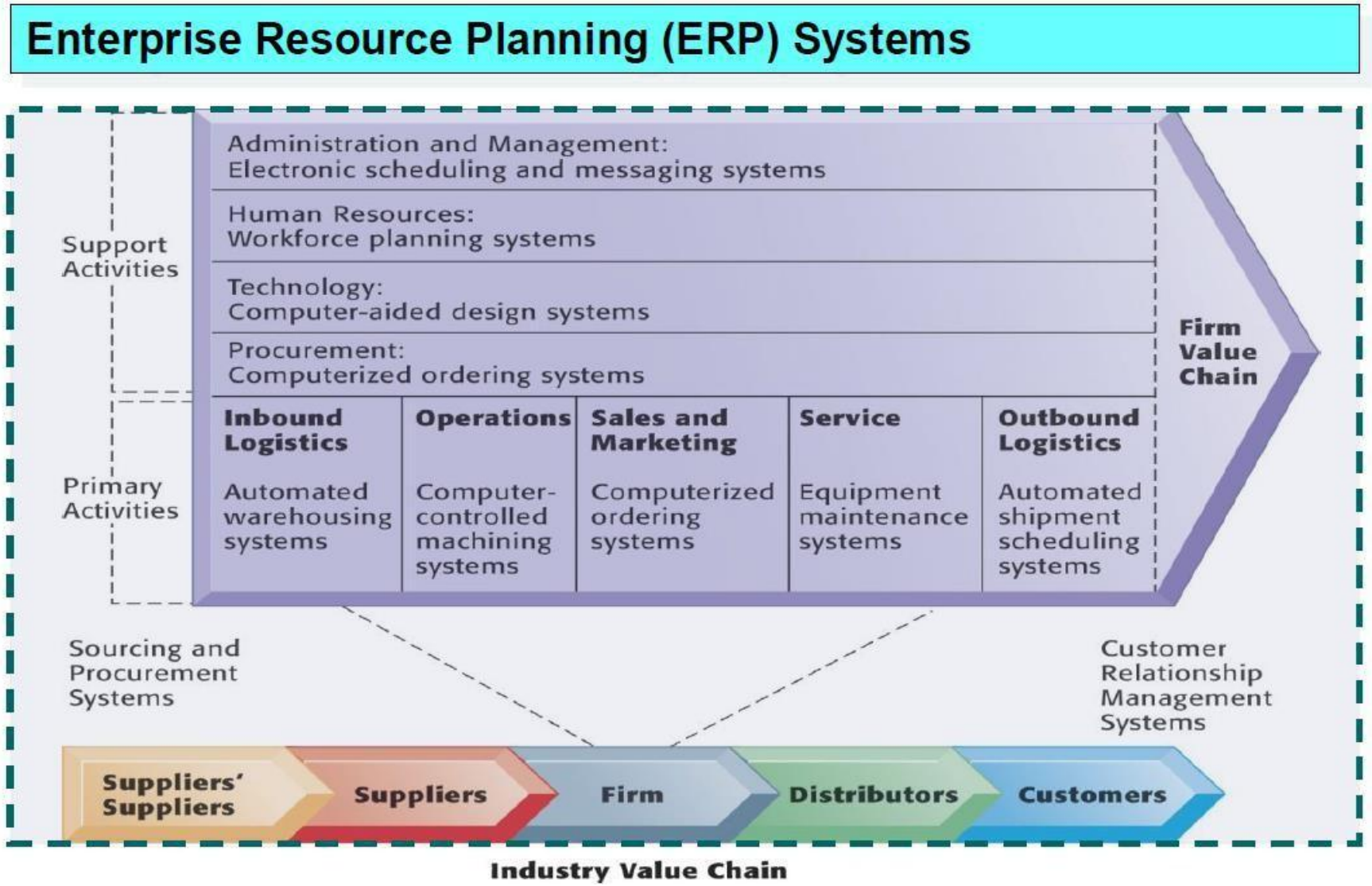
- Improvement of process coordination and management decision making
- Reductions in inventory costs, order -to-delivery time, and more efficient customer response and higher product and customer profitability

Solution Guidelines:

- Look at business objectives first
- Attention to data and data management
- Senior management commitment and employee support
- Education and training

Enterprise Resource Planning

Information Systems Roles in the Value Chain

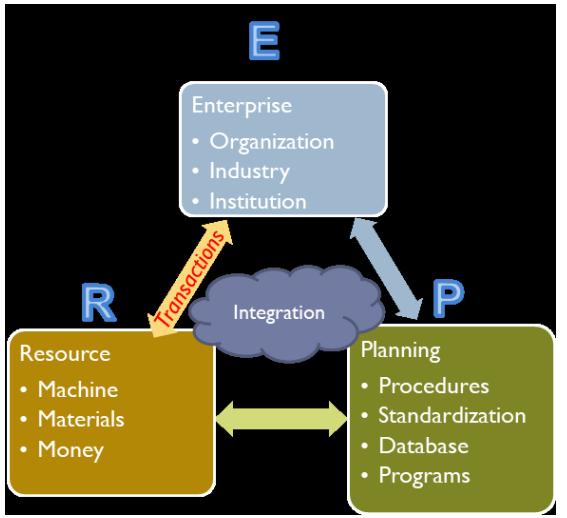


Enterprise Resources Planning (ERP)

Enterprise Resource Planning (ERP)

A method for the effective planning and control of all resources needed to take, make, ship, and account for customer orders in a manufacturing, distribution, or service company.

Enterprise Resources Planning



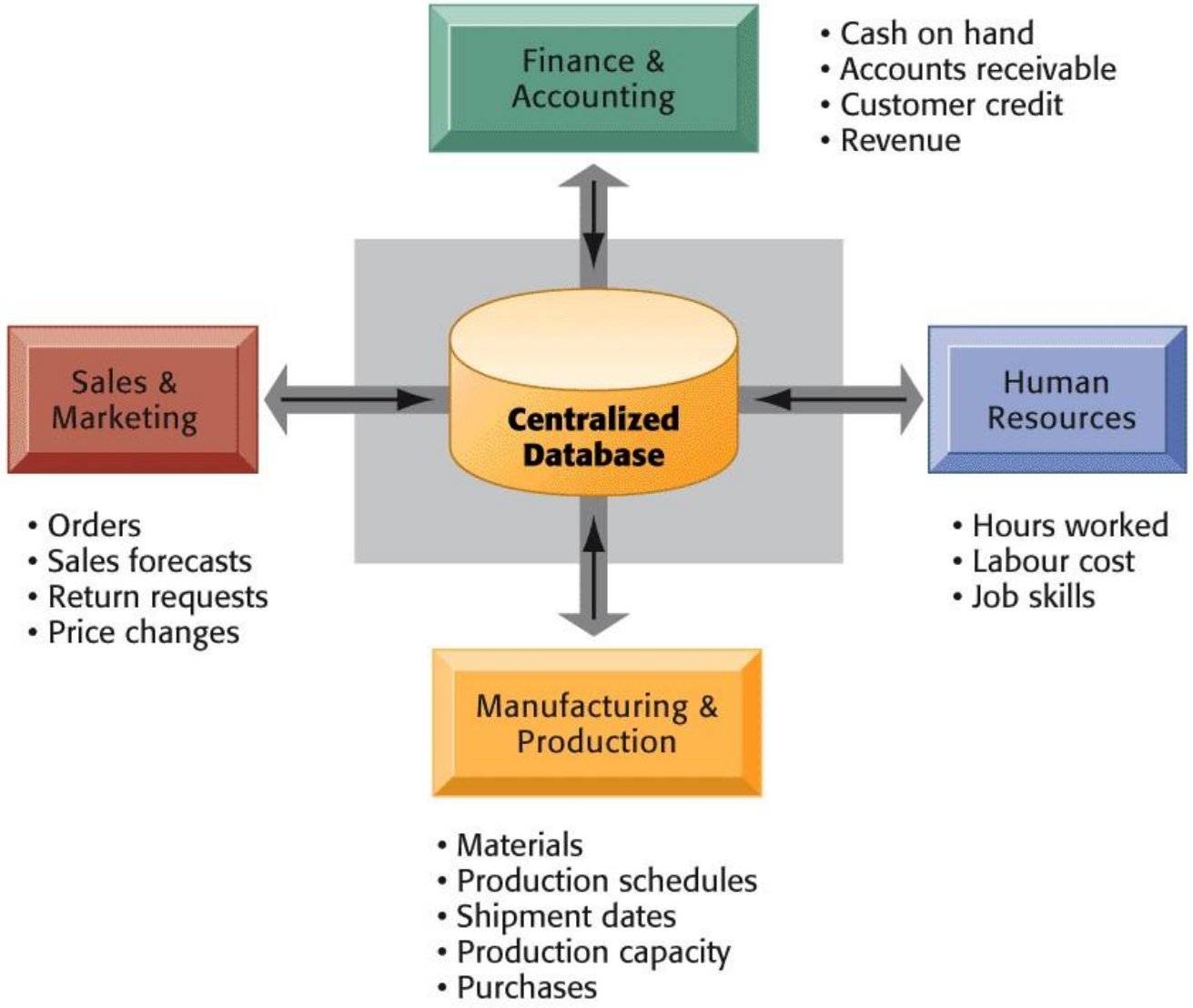
Integrated Packages

Richly functional systems designed to support many organizational functions (e.g. accounting and finance)

ERP Key Characteristics

- **Internally focused** systems designed to support the internal operations of an organization.
- **Highly integrated** systems that share a common data warehouse for information sharing across functions, using real-time updates.
- **Organizational fit** may be less ideal for individual departments, but the integrated sharing of information usually outweighs this issue.
- **Usually packaged applications** supported by the vendor, utilizing a common user interface.
- **Customization is discouraged**, but these systems offer flexibility to support external applications through a common data repository and interfaces.

ERP System Architecture



ERP Software

- Interdependent software modules with a common central database
- Support basic internal business processes for finance and accounting, human resources, manufacturing and production, and sales and marketing
- Enables data to be used by multiple functions and business processes for precise organizational coordination and control
- Software is developed around predefined business processes
- Firms select functions needed, then map to the predefined processes in the software
- Best practices are the most successful solutions or problem-solving methods for consistently achieving an objective

ERP Software SAP

- Based in Germany, now worldwide
- Support for international transactions and multinational firms
- Runs on multiple database and hardware platforms
- Can handle large and small companies
- Expensive, but price is relative.

Financials Logistics

Human resource management

ERP Capabilities SAP Example

Business Analysis

Evaluate business performance through functionality for analyzing workforce, operations, and supply chain

Financial and Management accounting

Manage corporate finance functions by automating financial supply chain management, financial accounting, and management accounting

Human Capital Management

Tools to maximize the profitability potential of workforce, with functionality for employee transaction management, and employee lifecycle

ERP Capabilities SAP Example

Corporate Services Management

Optimize centralized and decentralized services for managing real estate, corporate travel, and incentives, and commissions.

Self-Services

Employee-centric portal that enables both employees and managers to create, view, and modify key information. Uses a broad range of interaction technologies, including web browser, voice, and mobile devices for easy access to internal and external business content, application, and services.

Lesson 6

Q&A