Chapter 8

Enterprise Systems

Information Technology For Management 6th Edition
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Learning Objectives

- Understand the essentials of enterprise systems and computerized supply chain management. Understand the essentials of enterprise systems and computerized supply chain management.
- Describe the various types of supply chains.
- Describe some major problems of implementing supply chains and some innovative solutions.
- Describe the need for integrated software and how ERP does it.

Learning Objectives (Continued)

- Understand business process management and how to enhance effectiveness
- Describe the product lifecycle management stages
- Describe CRM and its support by IT

ERP and Supply Chains

ERP or **enterprise systems** control all major business processes with a single software architecture in real time.

- It is comprised of a set of applications that automate routine back-end operations such as:
  - financial management
  - inventory management
  - scheduling
  - order fulfillment
  - cost control
  - accounts payable and receivable
- It includes front-end operations such as:
  - POS
  - Field Sales
  - Service
- It also increases efficiency, improves quality, productivity, and profitability.

ESSENTIALS OF ENTERPRISE SYSTEMS AND SUPPLY CHAINS

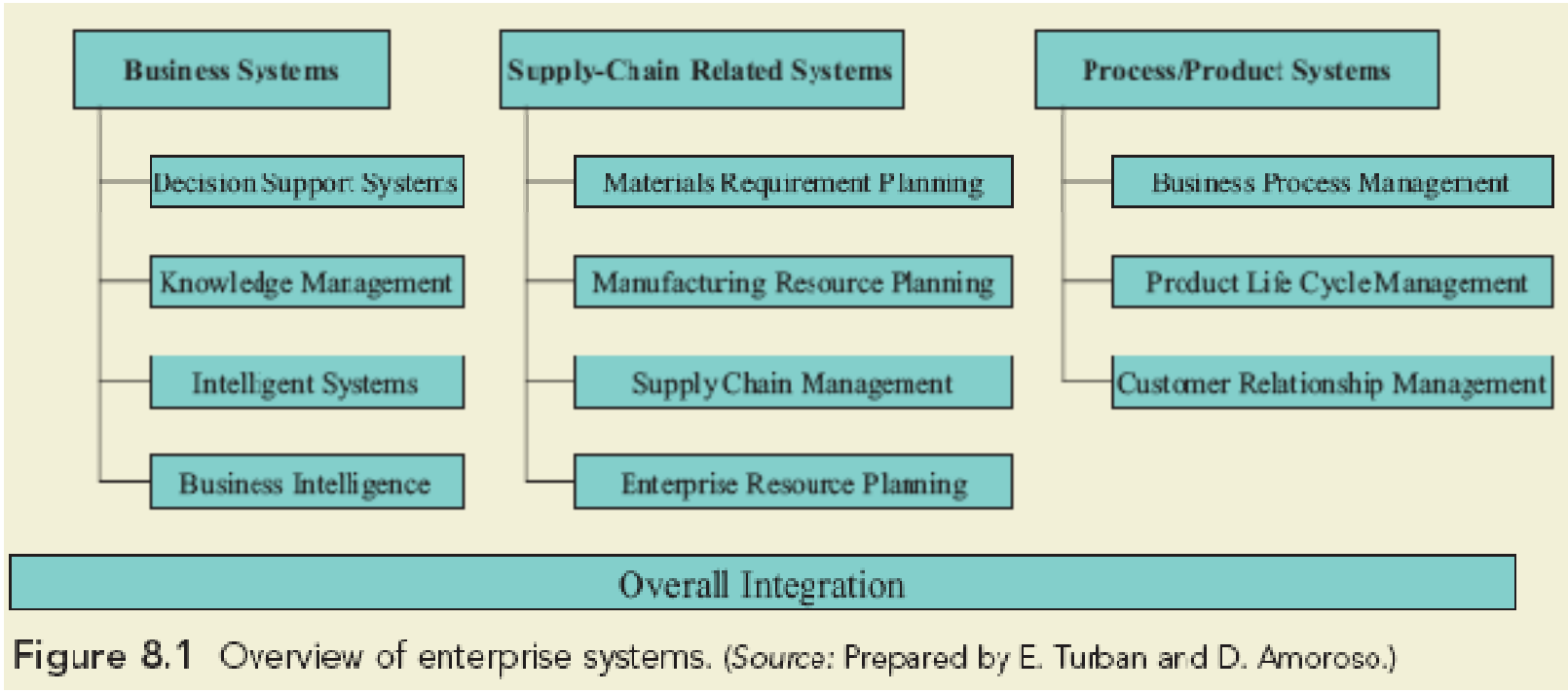


Figure 8.1 Overview of enterprise systems. (*Source:* Prepared by E. Turban and D. Amoroso.)

Supply Chain

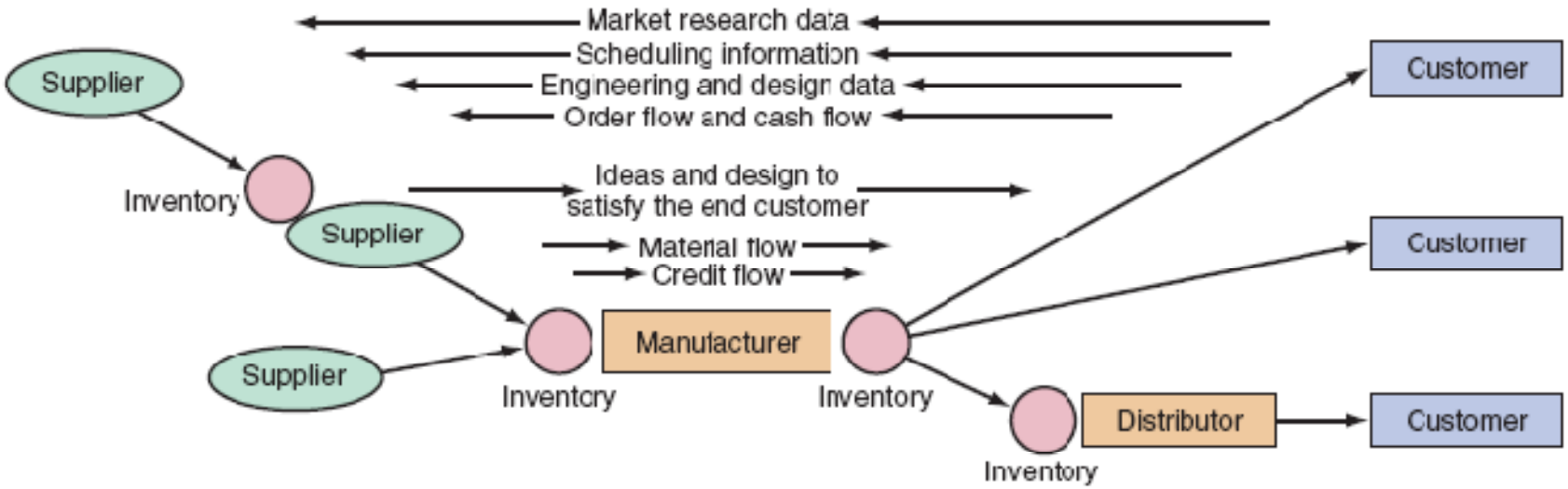


Figure 8.2 The supply chain. (*Source:* Heizer and Render, 2004.)

Supply Chain Problems

Adding value along the chain is essential for competitiveness, however, problems exist especially in complex or long chains and in cases where many business partners are involved. These problems are due to uncertainties and the need to coordinate several activities, internal units, and business partners.

- **Demand forecasts are a major source of uncertainties**
  - **Competition**
  - **Prices**
  - **Weather conditions**
  - **Technological development**
  - **Customer confidence**
- **Uncertainties exist in delivery times**
  - **Machine failures**
  - **Road conditions**
  - **Shipments**
- **Quality problems may also create production delays**

Supply Chain Problems (Continued)

The **bullwhip effect** refers to erratic shifts in orders up and down the supply chain because of poor demand forecasting, price fluctuation, order batching, and rationing within the chain. Even slight demand uncertainties and variability become magnified if each distinct entity, on the chain, makes ordering and inventory decisions with respect to its own interest above those of the chain. Distorted information can lead to tremendous inefficiencies, excessive inventories, poor customer service, lost revenues, ineffective shipments, and missed production schedules.

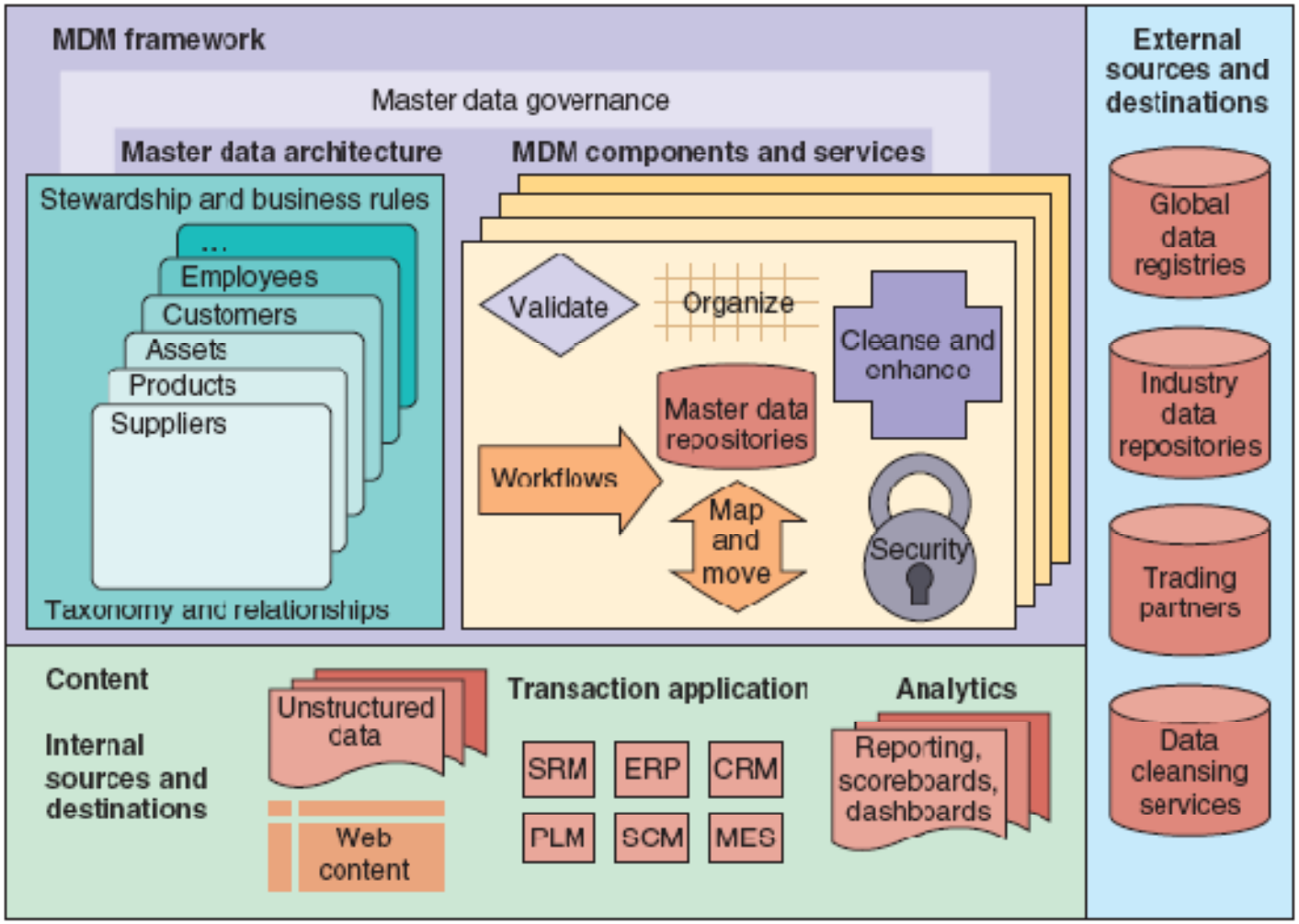
A common way to solve the bullwhip problem is by sharing information along the supply chain through EDI, extranets, and groupware technologies. For example employing a **vendor-managed inventory (VMI) strategy**, the vendor monitors inventory levels and when it falls below the threshold for each product this automatically triggers an immediate shipment.

Supply Chain Solutions

Information sharing among supply chain partners (*c-commerce*) sometimes referred to as the collaboration supply chain is one method to overcome problems in the flow. Others are:

- Optimal Inventory Levels
- Supply Chain Coordination and Collaboration
- Supply Chain Teams
- Performance Measurement and Metrics
- Various IT-Assisted Solutions
  - wireless technology
  - optimal shipping plans
  - strategic partnerships with suppliers
  - just-in-time

Supply Chain Solutions (Continued)



Supply Chain Collaboration Management

Every company that has business partners has to manage the relationships with them. Information needs to flow between the firms and must be constantly updated and shared.

- Manual methods include: phone, fax, and mail
- EDI is typically used by large corporations
- EC PRM functions include:
  - partner profiles
  - partner communications
  - lead management (of clients)
  - targeted information distribution
  - connecting the extended enterprise
  - partner planning
  - centralized forecasting
  - group planning
  - e-mail
  - price lists

Global Supply Chains

Supply chains that involve suppliers and/or customers in other countries are referred to as **global supply chains.**

- Companies go global (*disperse the value chain*) for a variety of reasons.
  - lower costs of materials, products, services and labor
  - availability of products that are unavailable domestically
  - the firm's global strategy
  - technology available in other countries
  - high quality of products
  - intensification of global competition
  - the need to develop a foreign presence to increase sales
  - fulfillment of counter trade.

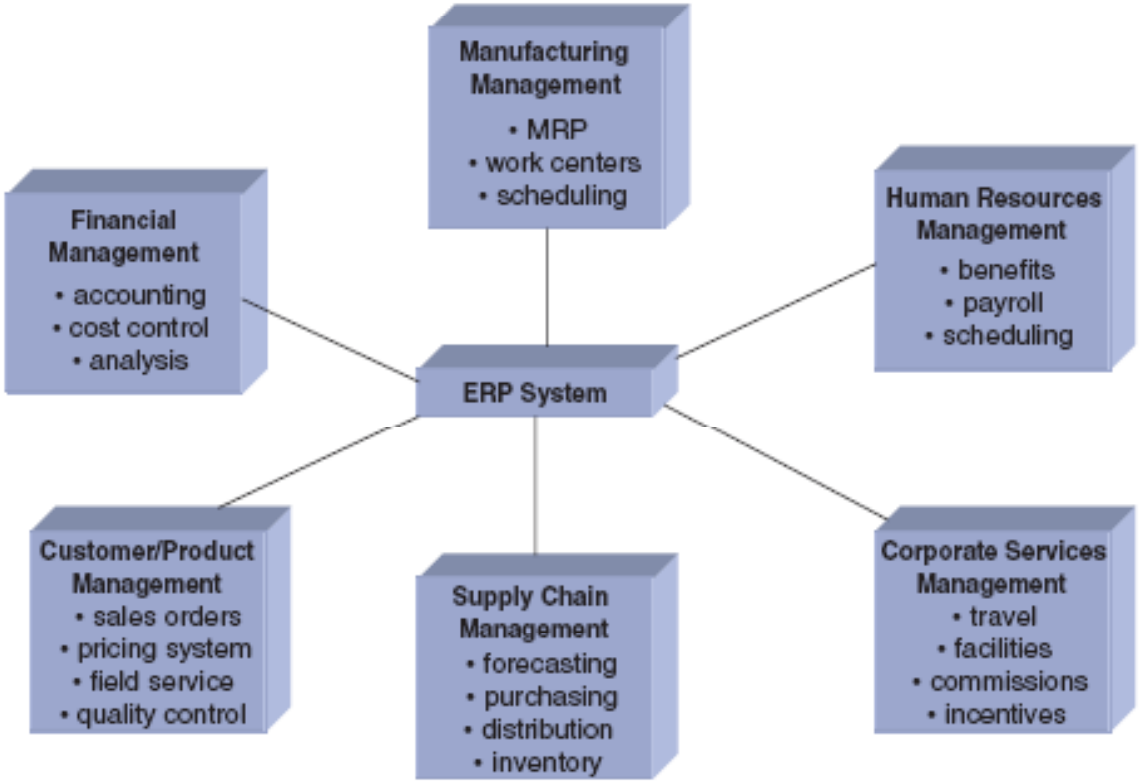
Global supply chains are usually longer than domestic ones, and more complex. Therefore, additional uncertainties are likely.

Computerized Supply Chains

The supply chain process is intertwined with the computerization of its activities. People have wanted to automate the processes along the chain to reduce cost, expedite processing, and reduce errors.

- **Material requirements planning (MRP)** essentially integrates production, purchasing, and inventory management of interrelated products.
- **Manufacturing resource planning (MRP II):** enhanced MRP methodology by adding labor requirements and financial planning.
- **Enterprise resource planning (ERP)** further integrates the transaction processing as well as other routine activities in the entire enterprise.
- Integrations continues along several paths
  - Functional areas
  - Combining transaction processing and decision support
  - Business intelligence
  - CRM software

Computerized Supply Chains (Continued)



E-Commerce and Supply Chains

E-commerce is emerging as a superb tool for providing solutions to problems along the supply chain. Many supply chain activities, from taking customers' orders to procurement, can be conducted electronically.

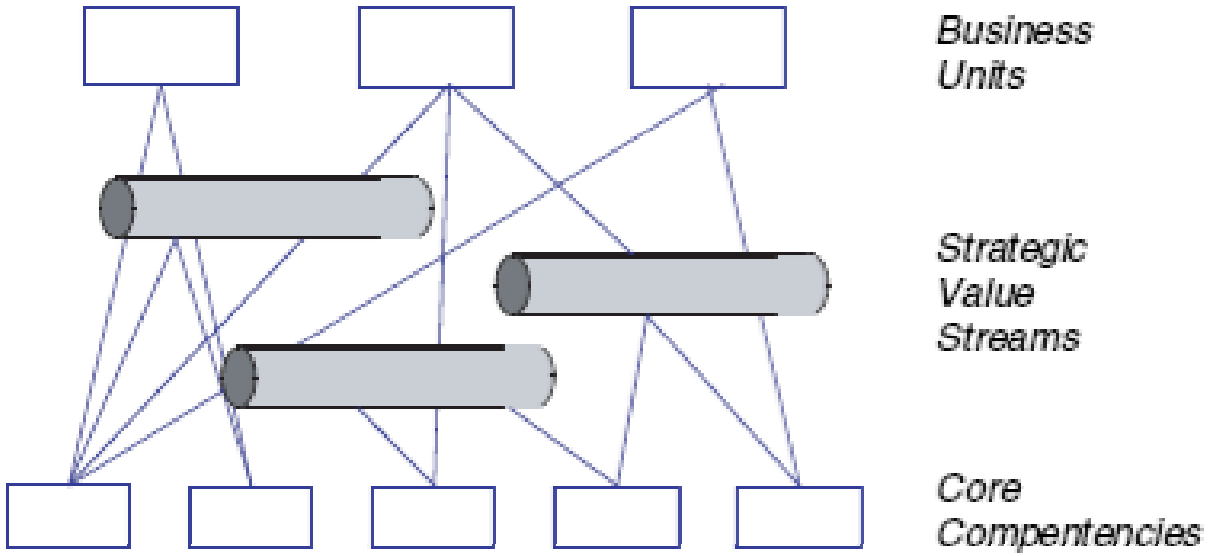
- E-commerce
  - can digitize some products
  - can replace all paper documents
  - can replace faxes and telephone calls with electronic messaging
  - Enhances collaboration and information sharing
  - typically shortens the supply chain and minimizes inventories
  - facilitates customer service
  - introduces efficiencies into buying and selling
  - enables faster, cheaper, and better communication, collaboration, and discovery of information

E-Commerce and Supply Chains (Continued)

A major role of EC is to facilitate buying and selling along all segments of the supply chain.

- **Upstream Activities** improve the upstream supply chain through *e-procurement*
- **Internal Supply Activities** from entering purchase orders, to recording sales, to order fulfillment, to tracking shipments, are usually conducted over a corporate intranet
- **Downstream Activities** enhance the activity downstream activities by providing online ordering
- **Vertical exchanges** combine upstream and downstream EC supply chain activities. These *B2B exchanges*, provide a medium where buyers and sellers can meet.

E-Commerce and Supply Chains (Continued)



A strategic value stream of high-level processes that add value to products and/or services.

Supply Chains Benefits

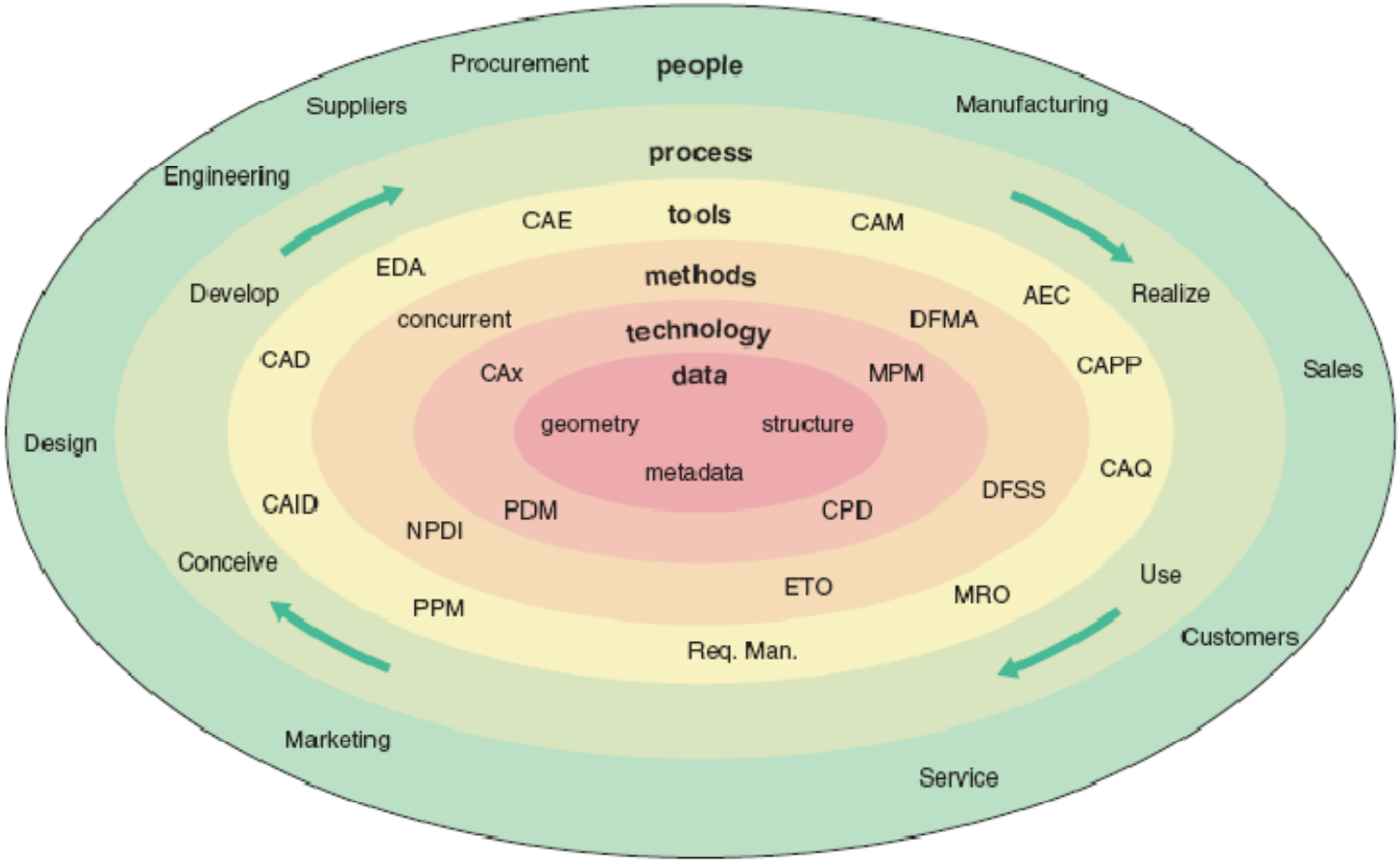
There are many benefits to integrating functional systems.

- *Tangible benefits:*
  - Inventory reduction
  - Personnel reduction
  - Productivity improvement
  - Order management improvement
  - Financial-close cycle improvements
  - IT cost reduction
  - Procurement cost reduction
  - Cash management improvements
  - Revenue/profit increases
  - Transportation logistics cost reduction
  - Maintenance reduction
  - On-time delivery improvement.

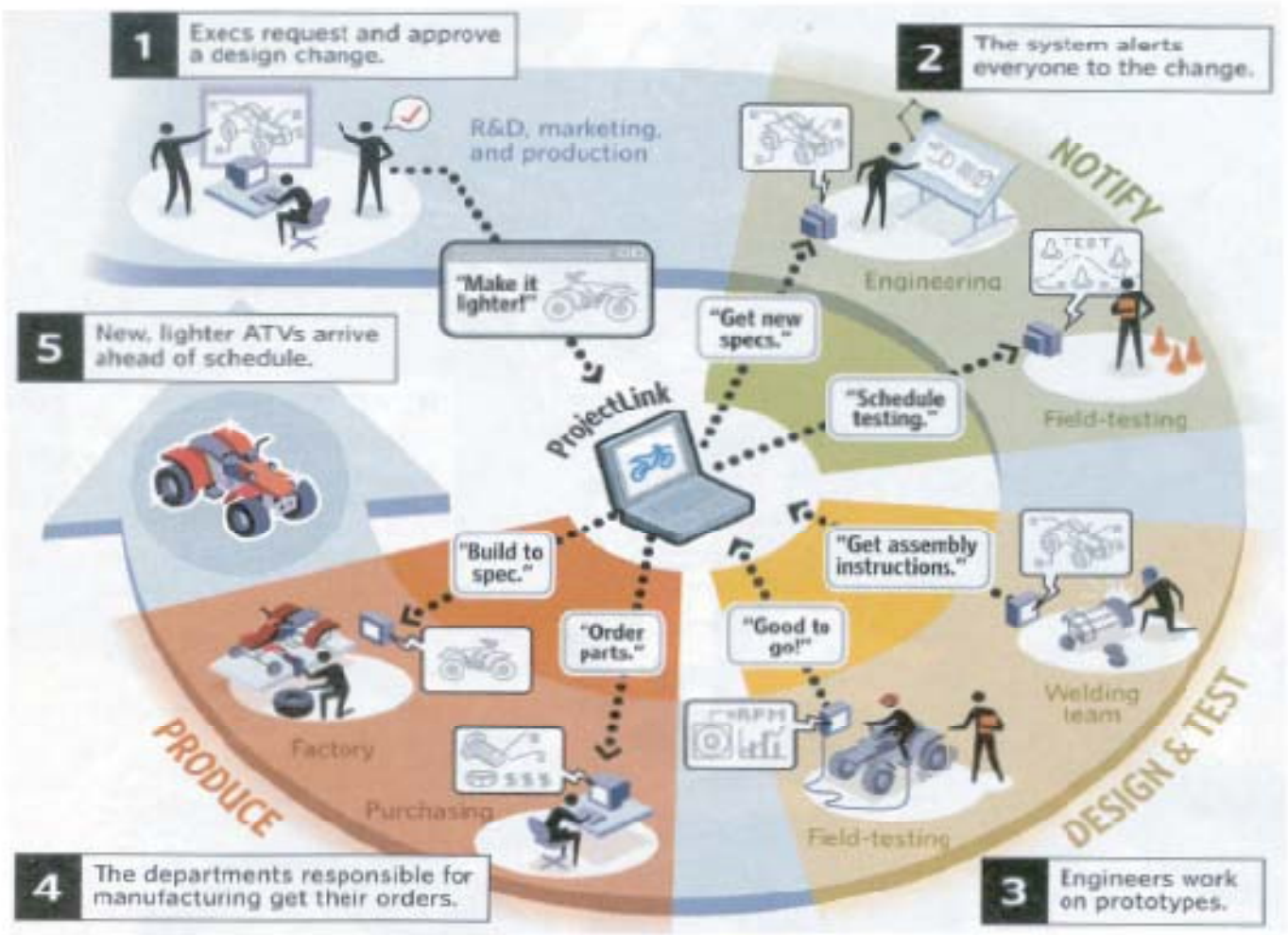
Supply Chains Benefits (Continued)

- *Intangible benefits:*
  - Information visibility
  - New/improved processes
  - Customer responsiveness
  - Standardization
  - Flexibility
  - Globalization
  - Business performance
  - Reduction in duplication of entries
  - Controls and reconciliation are enhanced
  - Rapid assimilation of data into the organization

Product Life Cycle



Product Life Cycle (cont'd)



Customer Relationship Management (CRM)

CRM recognizes that customers are the core of a business and that a company's success depends on effectively managing relationships with them. It focuses on building long–term and sustainable customer relationships that add value both for the customer and the company.

- Types of CRM
  - Operational CRM
  - Analytical CRM
  - Collaborative CRM

Customer Relationship Management (CRM) (Continued)

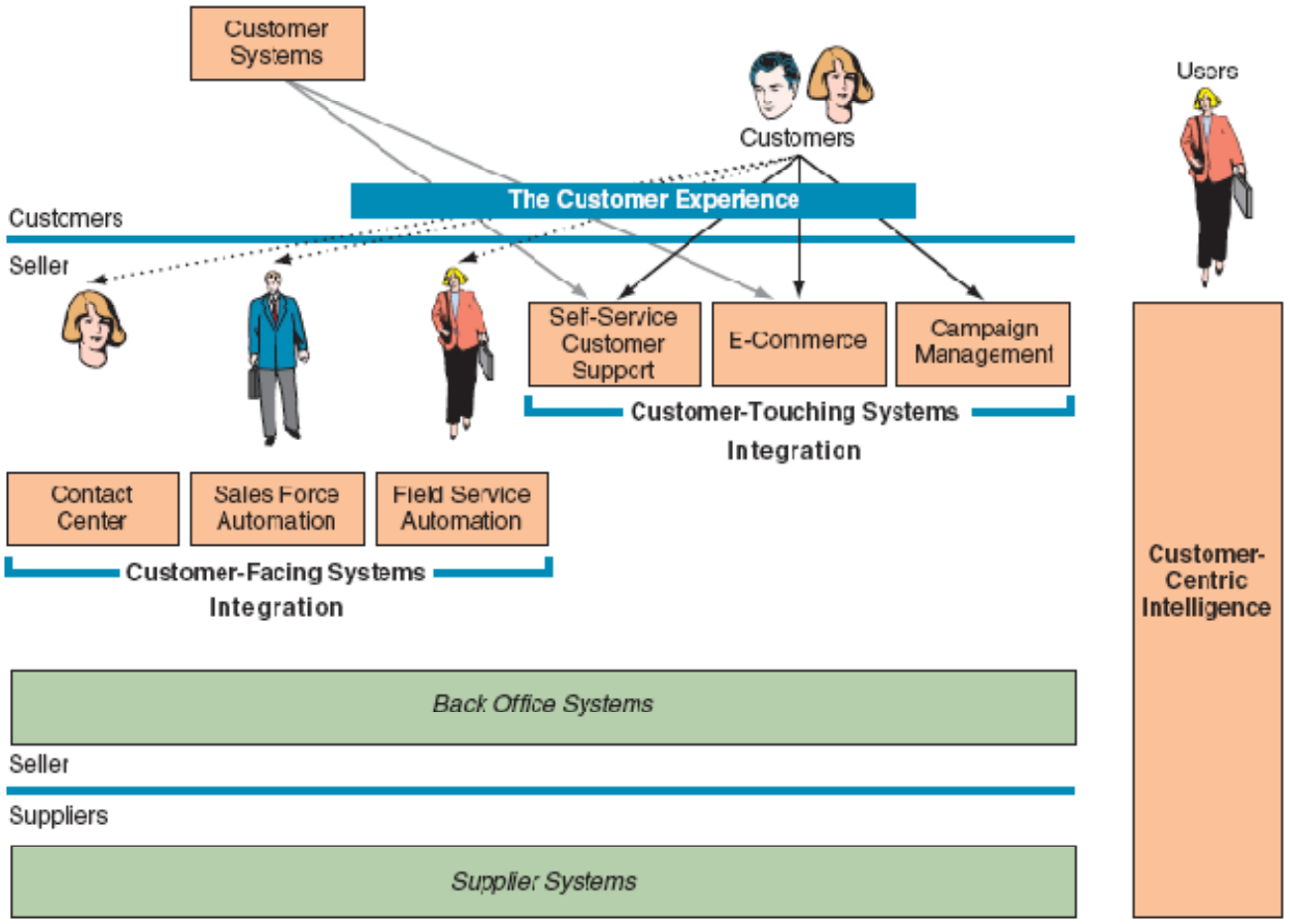


Figure 8.10 CRM applications. (*Source:* Patricia Seybold Group, *An Executive's Guide to CRM*, March 21, 2002.)

Customer Relationship Management (eCRM)

- CRM has been practiced manually by corporations for generations. However, Ecrm (electronic CRM) started in the mid-1990's ,when customers began using Web browsers, the Internet, and other electronic touch points.
  - THE SCOPE OF E-CRM. We can differentiate three levels of e-CRM:
    - Foundational service. This includes the minimum necessary services such as Website responsiveness (e.g., how quickly and accurately the service is provided), site effectiveness, and order fulfillment.
    - Customer-centered services. These services include order tracking, product configuration and customization, and security/trust. These are the services that matter the most to customers.
    - Value-added services. These are extra services such as online auctions and online training and education.

Customer Relationship Management CRM Activities

- Customer Service on the Web
  - Search and Comparison Capabilities
  - Free Products and Services
  - Technical and Other Information and Service
  - Allowing Customers to Order Products and Services Online
  - Letting Customers Track Accounts or Order Status

- Tools for Customer Service
  - Personalized Web Pages
  - FAQs
  - Chat Rooms
  - E-Mail and Automated Response
  - Call Centers
  - Troubleshooting Tools
  - Wireless CRM

Managerial Issues

- **Ethical issues**
- **How much to integrate?**
- **Role of IT**
- **Organizational adaptability**
- **Going global**
- **The Customer is king/queen**
- **Set CRM policies with care**

Chapter 8

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