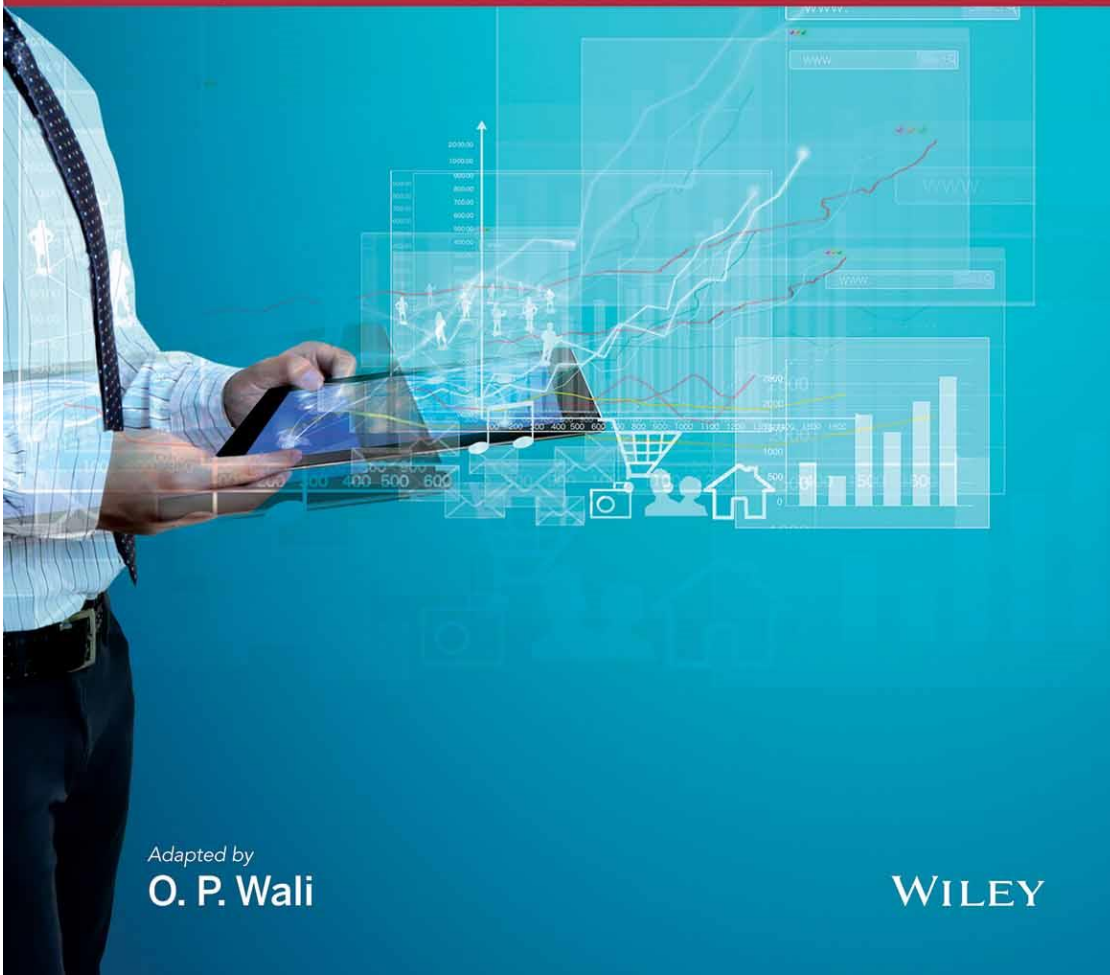


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# Information Technology for Management

Advancing Sustainable, Profitable Business Growth



Adapted by  
**O. P. Wali**

**WILEY**

ns, Inc.

## **Chapter 10**

# **Strategic Enterprise Systems**

# Chapter Outline

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1. [Enterprise Systems](#)
2. [Enterprise Social Platforms](#)
3. [Enterprise Resource Planning Systems](#)
4. [Supply Chain Management Systems](#)
5. [Customer Relationship Management Systems](#)

# 1. Enterprise Systems

# Enterprise Systems

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## Enterprise Systems

- A category of cross-functional and inter-organizational systems that support business strategy.
- Primary enterprise systems:
  - Enterprise Resource Planning (ERP)
  - Supply Chain Management (SCM)
  - Customer Relationship Management (CRM)

**TABLE 10.2** Enterprise Systems and Their Functions

<b>Name</b>	<b>Abbreviation</b>	<b>Description</b>
Enterprise resource planning	ERP	<p>ERP is the software infrastructure that integrates an enterprise's internal applications, supports its external business processes, and links to its external business partners.</p> <p>ERP systems are commercial software packages that integrate business processes, including supply chains, manufacturing, financial, human resources, budgeting, sales, and customer service.</p>

**TABLE 10.2** Enterprise Systems and Their Functions

<b>Name</b>	<b>Abbreviation</b>	<b>Description</b>
Supply chain management	SCM	<p>SCM software supports the steps in the supply chain—procurement, sourcing, manufacturing, storage, inventory control, scheduling, order fulfillment, and distribution.</p> <p>SCM improves decision making, forecasting, optimization, and analysis.</p>
Customer relationship management	CRM	<p>CRM systems help create a total view of customers to maximize share-of-wallet and profitability. CRM is also a business strategy to segment and manage customers to optimize customer lifetime value (CLV).</p>

# Enterprise Systems

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- Core business processes
  - Include accounting, finance, sales, marketing, human resources, inventory, productions, and manufacturing.
- Customer lifetime value
  - CLV is a formula for estimating the dollar value, or worth, of a long-term relationship with a customer.
- Value-added reseller (VAR)
  - Customizes or adds features to a vendor's software or equipment and resells the enhanced product.

# Enterprise Systems

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- Implementation Challenges
  - Complexity from incorporating different organizational facets.
  - Time-consuming coordinating an enterprise integration.
  - Typically requires consulting, vendor, or value-added reseller (VAR) assistance.



# Enterprise Systems

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- Legacy Challenges
  - Legacy systems are older information systems maintained over decades because they fulfill critical needs.
  - They are difficult and expensive to maintain, update, and interface securely with leading-edge business applications

# Enterprise Systems

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- Legacy Challenges
  - High maintenance costs
  - Inflexibility (integration issues)
  - Integration obstacles (hardwired)
  - Lack of staff (qualified/trained professionals)

# Enterprise Systems

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- Benefits
  - Reduced maintenance through integrated or cloud systems.
  - Flexible architectures provide scalability.
  - CRM and web-based applications ease future integration.
  - Large enterprise systems mean more skilled staff availability.

# Enterprise Systems

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- Implementation Best Practices
  1. Redesign of business processes through simplification and redesign so that they can be automated, either totally or partially, or removed.
  2. Changes in how people perform their jobs or accommodate the new processes.
  3. Integration of many types of information systems so that data can flow seamlessly among departments and business partners.

# Enterprise Systems

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- Insights
  - Provide and support applications that enable workers to access, use, and understand data.
  - Using data about buying behaviors helps a company identify its loyal customers and which ones are profitable.
  - Improving communication and integration among firms in a global supply chain justifies billions invested in ERP systems.

# Enterprise Systems

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1. Explain the purpose of an enterprise system.
2. Describe three types of enterprise systems.
3. What is customer lifetime value (CLV)?
4. What is a value added reseller (VAR)?
5. What are two challenges of legacy systems?
6. Why do companies migrate to enterprise systems?
7. Explain the challenges of enterprise system implementation.
8. Explain the three types of changes needed when an enterprise system is implemented.

## 2. Enterprise Social Platforms

# Enterprise Social Platforms

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Smart companies connect their employees' desire to contribute and interact with peers, with their own need to get timely feedback from the trenches.



# Enterprise Social Platforms

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- Enterprise Social
  - Refers to private (company owned) social media, software, platforms, or apps specially designed for use by business leaders and employees to fulfill the strategic mission.
  - Three main reasons for interest:
    - Knowledge management
    - Collaboration
    - Employee pressure

# Enterprise Social Platforms

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- SharePoint
  - A collaborative and social platform from Microsoft with *Yammer* the social collaboration tool of choice over the *Microsoft Cloud*.
- Yammer
  - A social network geared toward enterprises. Employees collaborate across departments, locations, and business applications.
- Office Graph with Oslo
  - Provides a natural way for users to navigate, discover, and search people, information, and knowledge across the enterprise.

# Enterprise Social Platforms

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- SharePoint
  - Provides tools for setting up employee social network platforms and company wikis.
  - Shared space to store documents from any desktop or mobile device, so they are not siloed on any one person's hard drive or device.
  - Enables coworkers to stay up-to-date and work simultaneously on a single document, save previous versions, and track updates.

# Enterprise Social Platforms

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- Yammer
  - Features similar to Facebook likes, newsfeeds, threaded conversation, and direct messaging.
  - This private social channel helps employees, partners, and customers communicate; exchange information; and collaborate across departments, locations, and business apps.
  - Includes **Enterprise Graph** shows how users are related to one another that solves social network sprawl.

# Enterprise Social Platforms

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- Jive
  - Provides tools for communication, sharing, and content creation to make social media monitoring and engagement easier.
- Chatter
  - Salesforce.com add-on offers companies their own private network while pushing updates and news in real time to user feeds, offering smart search, which places items an employee frequently uses higher in the search list.

# Enterprise Social Platforms

**TABLE 10.3** Recommendations to Realize Business Value from Enterprise Social

- 1. Make sure management is listening.** Leaders and decision makers need to monitor social chatter to keep informed and respond promptly.
- 2. Provide visible feedback and rewards.** Employee participation is largely driven by the desire to be recognized by peers and managers.
- 3. Brand the social network.** Employees want to feel the company is behind the initiative. At Red Robin, for example, renaming Yammer to Yummer connected employees to the brand.
- 4. Identify and leverage change agents.** Start with those employees most eager to participate, especially Millennials who are looking for recognition and purpose.
- 5. Introduce competitions and games.** Experience shows that people are more likely to engage when they are having fun.
- 6. Make the rules of engagement simple.** Do not overengineer or control the social network. Make it easy to enroll and participate.

# Enterprise Social Platforms

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1. What are the basic functions of an enterprise social platform?
2. What are the capabilities of SharePoint?
3. In what ways can enterprises realize value from Yammer or other enterprise social?
4. How do Office Graph and Enterprise Graph support collaboration?
5. How does Chatter enable workers to solve problems?

# 3. Enterprise Resource Planning Systems



# Enterprise Resource Planning Systems

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- ERP is used to manage the business.
- ERP is a system for improving the efficiency of business processes.
- ERP allows for the rapid sharing of standardized information throughout all departments.
- Employees all enter information into the ERP system, creating a real-time, enterprise-wide snapshot.
- Problems in any area will automatically create alerts in other affected areas.
- This allows departments to begin planning for issues before they become a problem in that department.

# Enterprise Resource Planning Systems

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- ERP Past to Present
  - Integrating accounting, finance, HR, marketing, and other critical business functions.
  - Originally run on client-server architecture and customer-designed apps.
  - Now web-based with a focus on social collaboration, deployment flexibility, faster response, and accessibility from mobile devices.
  - An enterprise application integration (EAI) layer enables the ERP to interface with legacy apps.

# Enterprise Resource Planning Systems

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- ERP Add-ons
  - Sales associates to process orders, take payments, and collect signatures with an iPad app.
  - Field technicians to provide customer service from anywhere.
  - Marketing to manage every aspect of ongoing customer relationships using a smartphone app.
  - Production to access to the real-time information needed to reduce stock-outs and excess inventory.
  - Customers to access, pay, and view invoices online.

# Technology Perspective

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- ERP is the software infrastructure that links an enterprise's internal applications and supports its external business processes.
- Departments stay informed about what is ongoing in other departments that impact its operations or performance.
- Knowing about problem situations and being able to work around them saves time and expense, and preserves good customer relations.

# Technology Perspective

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- In ERP, a manufacturer shares the database of:
  - Parts,
  - Products,
  - Production capacities,
  - Schedules,
  - Backorders, and
  - Trouble spots.

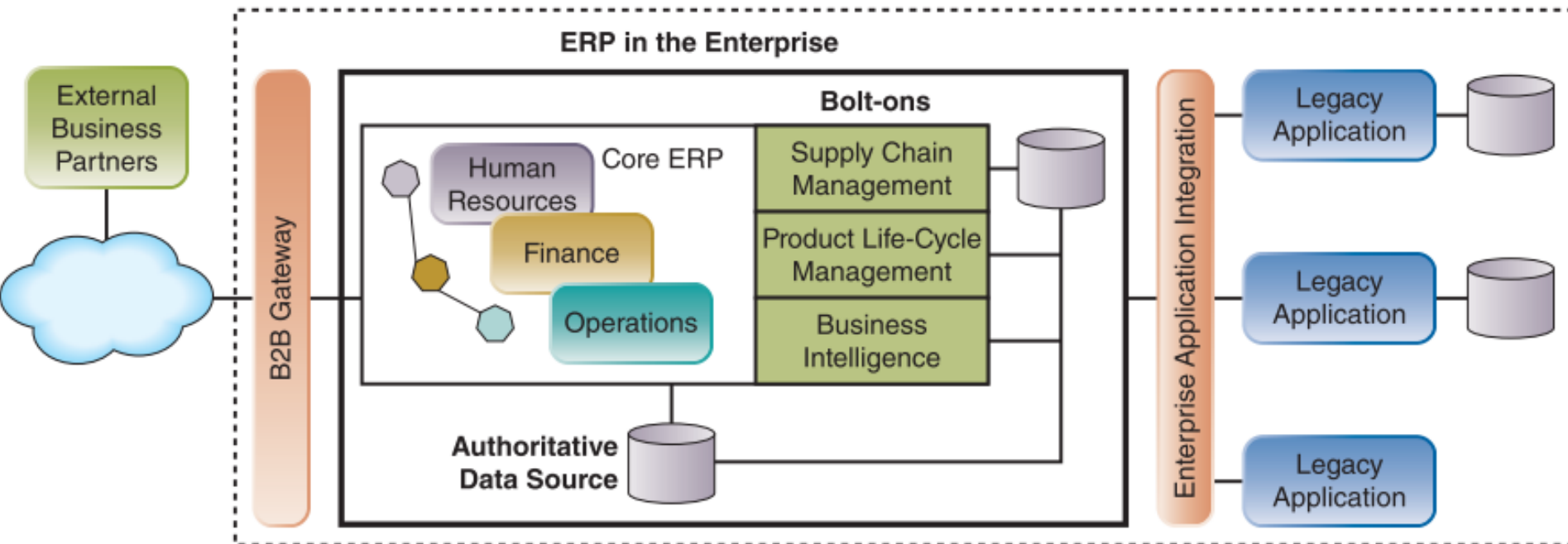
# Technology Perspective

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- Responding quickly and correctly to materials shortages, spikes in customer demand, or other contingencies means that small initial problems are solved instantly.
- All ERPs must be customized to the needs of the company.

# Technology Perspective

- Acquisition – build, lease, or buy.
  - All ERPs must be customized to the needs of the company.



**Figure 10.8** Overview of the complexity of ERP and its interfaces with other enterprise systems (U.S. Army Business Transformation Knowledge Center, 2009).

# Agency Replaced 50 Legacy Systems with an ERP

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A large European public-sector agency processes 200 million payments every year. Its finance and HR systems were a complex combination of 50 legacy systems that had evolved over time without a plan. Technical support for the outdated legacy systems was no longer available, and the few remaining internal developers were near retirement. The agency had to replace this legacy architecture with an ERP system that could process the hundreds of millions of payments and support more than 70,000 users.



# Agency Replaced 50 Legacy Systems with an ERP

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In the first phase of the ERP implementation project, the scope and budget of the ERP were approved, vendor proposals were evaluated, and a contract with the selected vendor was negotiated. These activities took almost a year to complete. Then a rollout strategy was developed wherein the legacy systems were replaced by ERP modules and new data stores. Replacing legacy systems with ERP requires migrating databases and applications. The roll-out strategy was planned to minimize risk by ensuring that the agency met its strict legal requirements of having one leading accounting system at all times.

# Agency Replaced 50 Legacy Systems with an ERP

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Implementing the ERP system across the agency took 2.5 years and was delivered on time and budget, and at the desired quarterly level. Extensive planning, executive support, experienced consultants, and ERP-informed vendor selection were key success factors.

# Enterprise Resource Planning Systems

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- Manufacturing ERP
  - Success depends on lower costs, shorter cycle times, and maximum production throughput.
  - Minimizing inventory errors and maintaining the optimal inventory level.
- Lean Manufacturing
  - Optimize inventory to keep production running while minimizing inventory-on-hand to control holding costs.
  - Help manufacturers avoid material shortages, manage production, and coordinate distribution channels, which improves on-time delivery.

# Enterprise Resource Planning Systems

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## ERP Selection Factors

1. Select an ERP solution that targets the company's requirements.
2. Evaluate potential ERP vendors' strengths and weaknesses.
3. Meet with each vendor and get a hands-on demo of its ERP solutions.
4. Calculate the ERP's total cost of ownership (TCO).

# Enterprise Resource Planning Systems

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## ERP Failure Factors

1. Cost misrepresentation.
2. Unrealistic implementation timeframes.
3. Software-license issues.

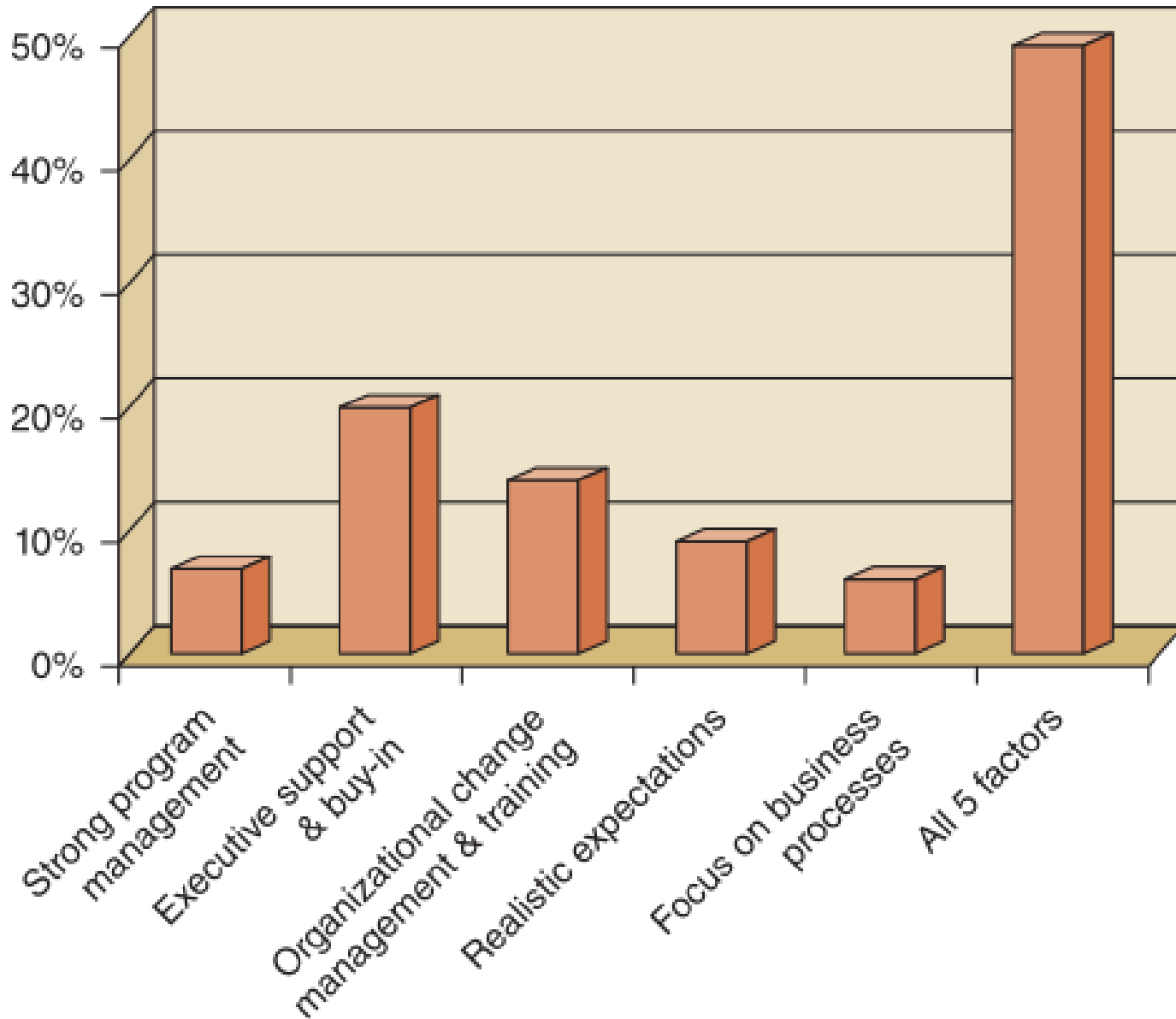
# Enterprise Resource Planning Systems

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## ERP Success Factors

1. Focus on business processes and requirements.
2. Focus on achieving a measurable ROI.
3. Use a strong project management approach and secure commitment of resources.
4. Obtain strong and continuing commitment from senior executives.
5. Take sufficient time to plan and prepare up-front.
6. Provide thorough training and change management.

**Survey responses to the question:  
*What is most important to successful ERP projects?***



## Companies Filing the Lawsuit and Companies Sued

## Description of ERP Disasters, Charges, and Outcomes

Distributor **ScanSource** filed a lawsuit in 2013 against **Avanade**, the joint venture between Accenture and Microsoft, for “bait-and-switch” tactics.

A half-million lines of custom code were not enough to produce a viable Microsoft Dynamics AX ERP system for point-of-sale and RFID products distributor ScanSource, according to a lawsuit ScanSource has filed against Avanade. AX is one of four ERP products sold under the Dynamics brand, and is aimed at larger companies.

The lawsuit alleges:

- The project was supposed to cost \$17 million and take 11 months, but the cost estimate grew to \$66 million and it had failed to go live after 3 years.
- Avanade misrepresented the skills of its consultants in order to win the contract; then sent in a continually changing cast of consultants without the expertise to do the job or familiarity with AX.

ScanSource terminated the contact with Avanade in September 2012 and hired another company to fix the problems at an additional cost of \$58 to \$72 million.



**Dillard's, Inc.** filed a suit against **JDA Software Group**.

Dillard's alleged that i2 failed to meet obligations regarding two software-license agreements for which the department store had paid \$8 million. In June 2010 JDA Software Group Inc. reported that its i2 Technologies unit lost the case and was ordered to pay \$246 million in damages.

**FoxMeyer Drugs** was a \$5 billion company and the nation's fourth largest distributor of pharmaceuticals before the ERP failure.

FoxMeyer's ERP could not process the transactions needed to supply its customers with their orders. FoxMeyer had been processing 425,000 invoice lines per day on its legacy software. The company's ERP was limited to 10,000 invoice lines per day. This quickly decreased order processing capability, sent the company into bankruptcy protection, and ultimately shut down the business.

FoxMeyer sued **SAP**, the ERP vendor, and **Andersen Consulting**, its SAP integrator, for \$500 million each in 1998.

Implementation was troubled almost from the start. Despite warnings from Woltz Consulting, during the early stages of the project, that a schedule for the entire implementation to be completed in 18 months was totally unrealistic, FoxMeyer went ahead with the vendor's planned implementation.

# Enterprise Resource Planning Systems

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1. What are three ways ERP can be deployed?
2. Briefly describe the latest ERP features and add-ons.
3. Describe ERP from a technology perspective.
4. Explain manufacturing ERP systems and lean principles.
5. List and briefly describe three ERP implementation success factors.
6. Describe causes or factors that contribute to ERP failure.

# 4. Supply Chain Management Systems

# Supply Chain Management Systems

- Supply Chain
  - Starts with the acquisition of raw materials or the procurement (purchase) of products and proceeds through manufacture, transport, and delivery—and the disposal or recycling of products.



Model of the supply chain.

# Supply Chain Management Systems

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- Supply Chain Flows
  - Material or product flow: the movement of materials and goods from a supplier to its consumer.
  - Information flow: the movement of detailed data among members of the supply chain, for example, order information, customer information, order fulfillment, delivery status, and proof-of-delivery confirmation.
  - Financial flow: the transfer of payments and financial arrangements.

# Supply Chain Management Systems

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- Supply Chain Management (SCM)
  - The efficient management of the flows of material, data, and payments along the companies in the supply chain, from suppliers to consumers.
  - SCM systems are configured to achieve the following business goals:
    - To reduce uncertainty and variability in order to improve the accuracy of forecasting.
    - To increase control over processes in order to achieve optimal inventory levels, cycle time, and customer service.

# Supply Chain Management Systems

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- Order Fulfillment
  - Part of back-office operations, such as accounting, inventory management, and shipping; and closely related to front-office operations or customer-facing activities with the key aspect as delivery of materials or products at the right time, to the right place, and at the right cost. Part of *logistics*.
- Logistics
  - Logistics entails all the processes and information needed to move products from origin to destination efficiently.

# Supply Chain Management Systems

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- Order Fulfillment Steps
  - Step 1: Make sure the customer will pay.
  - Step 2: Check in-stock availability and reorder as necessary.
  - Step 3: Arrange shipments.
  - Step 4: Insurance.
  - Step 5: Replenishment.
  - Step 6: In-house production.
  - Step 7: Use suppliers.
  - Step 8: Contacts with customers.
  - Step 9: Returns.



# Supply Chain Management Systems

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- Order Fulfillment
  - Part of back-office operations, such as accounting, inventory management, and shipping; and closely related to front-office operations or customer-facing activities with the key aspect as delivery of materials or products at the right time, to the right place, and at the right cost.

# Supply Chain Management Systems

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- Supply Chain Research
  - The top two strategic priorities of executives are *supply chain analytics* and *multichannel fulfillment*.
  - The two major barriers preventing innovation in the supply chain are a talent shortage and a continuing focus on cost reduction reducing sustainability.
  - Sustainability, mobility/machine-to-machine (M2) technology and 3D printing are emerging innovations.

# Supply Chain Management Systems

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- Supply Chain Analytics
  - Algorithms and SCM models based on past demand, supply, and business cycles are inadequate to effectively manage the supply chain used to help predict the future.
- Multichannel Fulfillment
  - Efficient handling of back-end order fulfillment processes.

# Supply Chain Management Systems

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- Supply Chain Technology
  - Mobility and mobile-to-mobile (M2M) technologies improving responsiveness and customer service.
  - 3D printing could have far-reaching implications, but immediate potential remains unrealized.

# Supply Chain Management Systems

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1. What is a supply chain?
2. List four functions carried out by companies in a supply chain.
3. List and describe the three main flows being managed in a supply chain.
4. Describe SCM.
5. What are steps in the order fulfillment?
6. Explain logistics.
7. What are the top two strategic priorities of SCM executives?
8. What are the two major barriers preventing innovation in the supply chain?
9. What are the top innovative digital technologies impacting SCM?

# 5. Customer Relationship Management Systems

# CRMS

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- CRM at its simplest is systems and processes for managing a company's interactions with current and potential customers.
- When we talk about CRM we usually are talking about CRM Software.
- CRM software is used to organize, automate and synchronize sales, marketing and customer service.
- CRM has developed to include all areas of the customer experience, keeping the customer happy and in turn keeping them loyal and more valuable to your business.

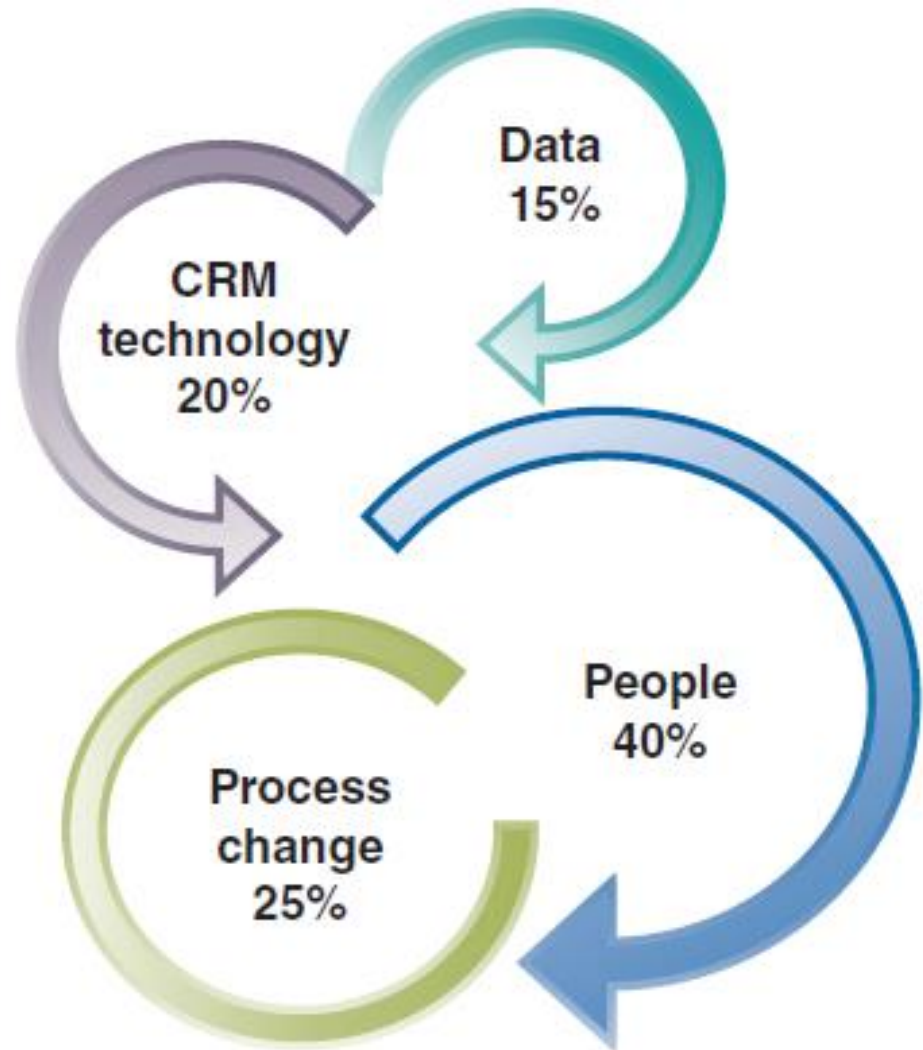
# CRMS

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- It is the process of identifying potential leads/prospects, nurturing them and guiding them through the sales process to close the business.
- Once they are a customer it is ensuring that you maintain that relationship and encourage repeat business – either more frequent orders or higher value.



# Customer Relationship Management Systems



**Figure 10.4** Four CRM critical success factors and their importance.

# Customer Relationship Management Systems

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- Making CRM Matter
  - Data analytics, sophisticated predictive analytics, and BI are needed to determine customer lifetime value (CLV); then business rules need to specify how to treat or manage customers based on their value score.
  - Intelligently managing relationships with customers can increase revenues and net profits significantly.

# Customer Relationship Management Systems

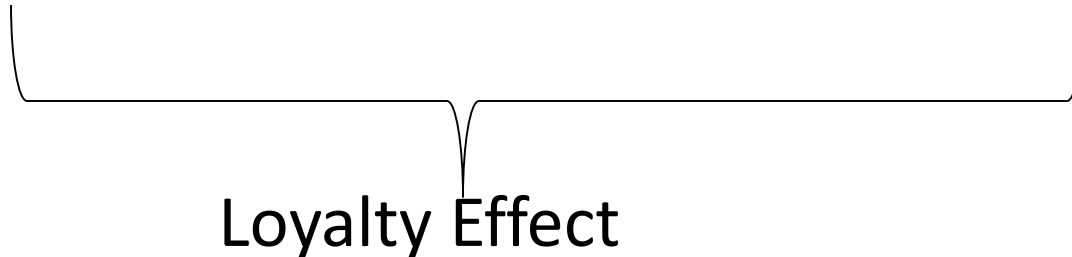
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- CRM and Customer Acquisition/Retention
  - CRM technologies help marketing managers run effective campaigns, promotions, commercials, and advertisements to attract new customers, or to increase sales to existing customers, or to do both.
  - Newly acquired customers are unprofitable until they have purchased enough products or services to exceed the cost to acquire and service them.
  - Retaining customers that generate revenues in excess of the costs is critical.

# Customer Relationship Management Systems

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- Drucker on Marketing Effectiveness
  - Know your customers
  - Understand customer needs
  - Communicate intelligently with customers



# Customer Relationship Management Systems

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- CRM Mistakes (Table 10.5)
  - IT department in charge instead of business users.
  - Incorrect CRM requirements by not involving key business stakeholders from the outset.
  - Mobility CRM strategy is an afterthought.
  - Taking the wrong approach to CRM training.
  - Underestimating users' resistance to change.

# Customer Relationship Management Systems

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- Measuring CRM Success
  - Tangible net benefits, intangible benefits, risk assessments lead to:
    - Increased staff productivity (more closed deals)
    - Cost avoidance
    - Revenues
    - Margin increases
    - Inventory cost reductions
    - Increased customer satisfaction, loyalty, and retention

# Customer Relationship Management Systems

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1. Explain the four critical success factors for CRM.
2. Why does CRM matter?
3. Discuss how CRM impacts customer acquisition and retention.
4. According to Peter Drucker, what does marketing effectiveness depend on?
5. Give three reasons why CRM fails.
6. How can CRM be justified?