

15.561
Information Technology Essentials

Session 13
Enterprise Systems

Outline

- **Overview of major IT applications**
- **Examples of enterprise systems**
 - Enterprise Resource Planning (ERP)
 - Customer Relationship Management (CRM)
 - Supply Chain Management (SCM)
- **Trends and business issues in IT applications**

Major IT applications in business

Executive Support Systems

5-year sales trend forecasts	5-year operating plan	5-year budget forecasts	Profit planning	Manpower planning
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Management Information Systems

Sales management	Inventory control	Annual budgeting	Capital investment analysis	Relocation analysis
Sales region analysis	Production scheduling	Cost analysis	Pricing/profitability analysis	Contract cost analysis

Knowledge Worker Systems

Engineering workstations	Word processing	Email	Web viewing	Spreadsheets
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Transaction Processing Systems

Public web sites	Machine control	Securities trading	Payroll	Compensation
Order tracking	Plant scheduling	Cash management	Accounts payable	Training & Development
Order processing	Material movement control		Accounts receivable	Employee records

Sales and Marketing

Manufacturing

Finance

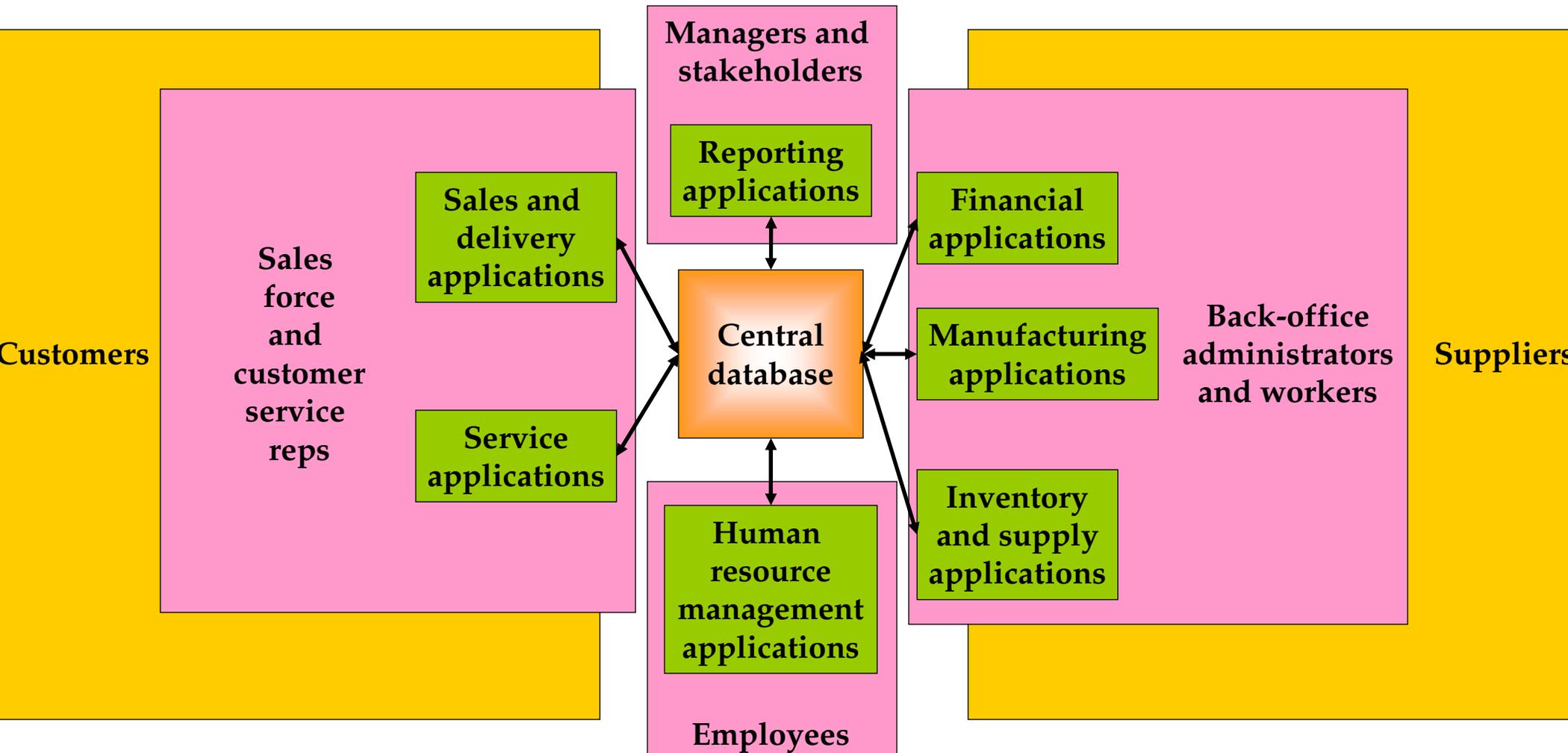
Accounting

Human resources

Enterprise Systems

- **IT applications that**
 - serve key corporate functions, and
 - involve centralized information shared by many users
- **Include**
 - one or more databases
 - programs to add, delete, change, analyze, or otherwise act upon data elements in those databases

Enterprise Resource Planning (ERP) systems



Source: T. Davenport, Putting the Enterprise into the Enterprise System, *Harvard Business Review*, July-August 1998, pp. 121-131.

Enterprise Resource Planning (ERP) systems

- Integrate many software applications and business functions using a common database
- Potential benefits
 - Cycle time reduction
 - Faster information transactions
 - Better financial management
 - Laying the groundwork for electronic commerce
 - Encourages organizations to manage processes more explicitly

Enterprise Resource Planning (ERP) Systems (cont.)

- **Potential risks**
 - Difficult to implement
 - » Often easier to adapt business processes to the software than vice versa
 - Inflexible
 - » “... like wet cement”
 - Overly hierarchical?

Customer Relationship Management (CRM) Systems

- **Sales Force Automation (pre-sales)**
 - managing leads and contacts
 - generating proposals
 - configuring products, telemarketing
- **Customer Service and Support (post-sales)**
 - help desks
 - call centers
 - field service operations
- **Marketing automation**

Customer Relationship Management (Web-based selling)

- **On-line sales**
 - product catalogs
 - shopping carts
 - credit cards
 - shopping lists
 - product configurator for complex products
- **On-line service**
 - help
- **on-line marketing analysis**
 - track on-line activities

Supply Chain Management (SCM) Systems

- Managing interrelated activities “from your suppliers’ suppliers to your customers’ customers.”
- May involve:
 - changing information flows and decision-making within a firm
 - changing information flows and decision-making between firms
 - using new software tools to enable these changes
 - » ERP systems
 - » Cross-organizational planning, scheduling, and optimization tools

Supply Chain Management (SCM) Systems (cont.)

- **Increase responsiveness to supply and demand fluctuations without sacrificing margins**
 - linking with suppliers, customers, and transportation providers
- **Reduce inventory**
- **Improve reliability of delivery commitments**
 - ATP (Available To Promise)
- **Manage changes in product mix**
 - including new product introductions

Other examples of enterprise systems

- EAI – Enterprise Application Integration
- Enterprise portals
- ERM – Employee Relationship Management
- Product Lifecycle Management (PLM)
- ...

Trends in IT applications

- **Web-based**
- **Mobile / wireless**
- **Integrated**
 - Across functions within a company
 - Across companies
- **Component-based**

Business issues with IT applications

- **Whether to buy?**
 - Analyzing costs and benefits
 - Business benefits vs. technical benefits
 - Buying early vs. buying late
- **What to buy?**
 - Matching capabilities and needs
 - Compatibility and standards
- **How to implement?**
 - Top management support
 - User involvement
 - Phased approach