



Information System

ITEC-522

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Information Technology

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Lecture #5

Enterprise Systems

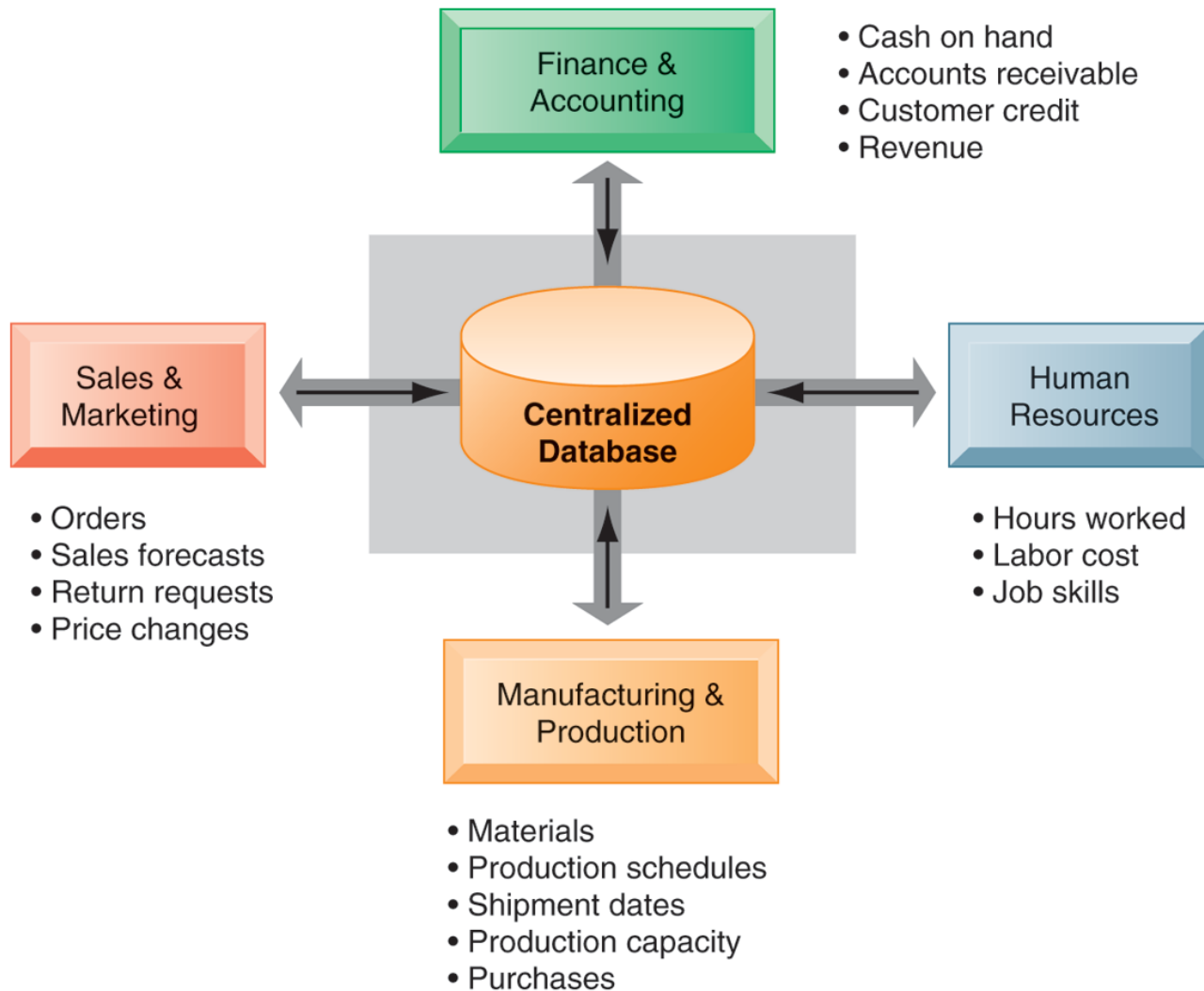
- What are enterprise systems
 - Suite of integrated software modules and a common central database
 - Collects data from many divisions of firm for use in nearly all of firm's internal business activities
 - Information entered in one process is immediately available for other processes



Cont.

- Enterprise Software
 - Built around thousands of predefined business processes that reflect best practices
 - Finance/accounting: General ledger, accounts payable, etc.
 - Human resources: Personnel administration, payroll, etc.
 - Manufacturing/production: Purchasing, shipping, etc.
 - Sales/marketing: Order processing, billing, sales planning, etc.
 - **To implement, firms:**
 - Select functions of system they wish to use
 - Map business processes to software processes

How Enterprise Systems Work





Cont.

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 are classified in three main categories:

- **Enterprise Resource Planning System**
- **Supply Chain Management System**
- **Customer Relationship Management System**



Enterprise Resource Planning (ERP) Systems

- Interdependent software modules with a common central database that support basic internal business processes for finance and accounting, human resources, manufacturing and production, and sales and marketing.
- “a business **strategy** and set of **industry-domain-specific** applications that build customer and shareholder **communities** value network system by enabling and optimising enterprise and **inter-enterprise** collaborative operational and financial processes” (Source: Gartner’s Research Note SPA-12-0420)



Historical system architectures

Historically, organizations created “islands of automation”.

Various systems that operated or managed various divergent business processes. Sometimes these systems were integrated with each other and sometimes they weren't. Sometimes they were loosely interfaced and sometimes they were more tightly interfaced.

ERP Packages

- Integrated systems
- Examples
 - SAP
 - PeopleSoft
 - Oracle Financials
- International environment
 - Multiple currencies
 - Multiple languages
 - Procedures and practices
 - Follows local (national) rules
 - Follows consolidation rules
 - Example
 - U.S. firm with European subsidiaries.
 - Data is entered once
 - European reports are generated for subsidiaries following local rules
 - Results are converted and consolidated to U.S. firm following international and U.S. rules



ERP Primary Functions

- Accounting
 - All transaction data and all financial statements in any currency
- Finance
 - Portfolio management and financial projections
- Human Resources Management
 - Employee tracking from application to release
- Production Management
 - Product design and manufacturing lifecycle
- Logistics/Supply Chain Management
 - Purchasing, quality control, tracking
- Customer Relationship Management
 - Contacts, orders, shipments



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



SAP Financials

- Financial Accounting
 - General ledger
 - Accounts receivable/payable
 - Special ledgers
 - Fixed assets
 - Legal consolidation
- Investment Management
 - Investment planning/budgeting/control
 - Depreciation forecast/simulation/calculation
- Controls
 - Overhead cost
 - Activity based costing
 - Product cost
 - Profitability analysis
- Treasury
 - Cash management
 - Treasury management
 - Market risk management
 - Funds management
- Enterprise Control
 - Executive information system
 - Business planning and budgeting
 - Profit center accounting
 - Consolidation



SAP Logistics

- Purchasing
- Materials management
- Manufacturing
- Warehousing
- Quality management
- Plant maintenance
- Service management
- Sales
- Distribution
- Product data management
 - Master data management
 - Design and change process
 - Product structure
 - Development projects
- Sales and distribution
 - Sales activities
 - Sales order management
 - Shipping and transportation
 - Billing
 - Sales information system



SAP Logistics

- Production planning and control
 - Production planning
 - Material requirements planning
 - Production control and capacity planning
 - Costing
 - Order information system
 - Shop floor information system
- Project system
 - Work breakdown structures
 - Network planning techniques, milestones
 - Cost, revenue, financial, schedule, and resource management
 - Earned value calculation
 - Project information system



SAP Logistics

- Materials management
 - Purchasing
 - Inventory management
 - Warehouse management
 - Invoice verification
 - Inventory controlling
 - Purchasing information system
- Quality management
 - Quality planning
 - Quality inspections
 - Quality control
 - Quality notifications and certificates
 - Quality management information system
- Plant maintenance
 - Structuring technical systems
 - Maintenance resource planning
 - Maintenance planning
 - System for technical and cost accounting data
 - Maintenance information system



SAP HRM

- Personnel management
 - HR master data
 - Personnel administration
 - Information systems
 - Recruitment
 - Travel management
 - Benefits administration
 - Salary administration
- Organizational management
 - Organization structure
 - Staffing schedules
 - Job descriptions
 - Planning scenarios
 - Personnel cost planning
- Payroll accounting
 - Gross/net accounting
 - History function
 - Dialog capability
 - Multi-currency capability
 - International solutions
- Time management
 - Shift planning
 - Work schedules
 - Time recording
 - Absence determination
 - Error handling



SAP HRM

- Personnel development
 - Career and succession planning
 - Profile comparisons
 - Qualifications assessments
 - Additional training determination
 - Training and event management
- Other features
 - SAP Business workflow
 - Internet scenarios
 - Employee self-service



ERP - Key Characteristics

Integration

seamless integration of all the information flowing through a company
- financial and accounting, human resource information, supply chain information, and customer information.



Cont.

Best Practices

- ERP vendors talk to many different businesses within a given industry as well as academics to determine the best and most efficient way of accounting for various transactions and managing different processes. The result is claimed to be “industry best practices”.
- The general consensus is that business process change adds considerably to the expense and risk of an enterprise systems implementation. Some organisations rebel against the inflexibility of these imposed business practices.



Cont.

Packages

Enterprise systems are not developed in-house

- IS life cycle is different
 1. Mapping organizational requirements to the processes and terminology employed by the vendor.
 2. Making informed choices about the parameter setting.
- Organizations that purchase enterprise systems enter into long-term relationships with vendors.



Cont.

Some Assembly Required

Only the software is integrated, not the computing platform on which it runs. Most companies have great difficulty integrating their enterprise software with a package of hardware, operating systems, database management systems software, and telecommunications suited to their specific needs.

- Interfaces to legacy systems
- Third-party applications
- Best of Breed Strategy



Cont.

Evolving

Enterprise Systems are changing rapidly

- Architecturally: Mainframe, Client/Server, Web-enabled and Object-oriented
- Functionally: front-office (i.e. sales management), supply chain (advanced planning and scheduling), data warehousing, specialised vertical industry solutions, etc.



Benefits and Challenges of ERP Systems

- Benefits
 - Firm structure and organization: One Organization
 - Management: Firm wide Knowledge-based Management Processes
 - Technology: Unified Platform
 - Business: More Efficient Operations and Customer-driven Business Processes
- Challenges
 - Implementation is an issue
 - High Up-front Costs and Future Benefits
 - Inflexibility



Discussion

Questions?