“Every Morning, I Get A Report About the Exercise Your Mother's Getting So I Can See How She's Doing.”
Study Questions

Q1: What are the basic types of processes?
Q2: How can information systems improve process quality?
Q3: How do CRM, ERP, and EAI support enterprise processes?
Q4: How do information systems eliminate the problems of information silos?
Q5: What are the elements of an ERP system?
Q6: What are the challenges of implementing and upgrading enterprise information systems?
Q7: How do inter-enterprise IS solve the problems of enterprise silos?
Q8: 2024?
Q1: What Are the Basic Types of Processes?

Business Process with Three Activities
How Do Structured Processes Differ from Dynamic Processes?

<table>
<thead>
<tr>
<th>Structured</th>
<th>Dynamic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support operational and structured managerial decisions and activities</td>
<td>Support strategic and less structured managerial decision and activities</td>
</tr>
<tr>
<td>Standardized</td>
<td>Less specific, fluid</td>
</tr>
<tr>
<td>Usually formally defined and documented</td>
<td>Usually informal</td>
</tr>
<tr>
<td>Exceptions rare and not (well) tolerated</td>
<td>Exceptions frequent and expected</td>
</tr>
<tr>
<td>Process structure changes slowly and with organizational agony</td>
<td>Adaptive processes that change structure rapidly and readily</td>
</tr>
<tr>
<td><strong>Example:</strong> Customer returns, order entry, purchasing, payroll, etc.</td>
<td><strong>Example:</strong> Collaboration, social networking, ill-defined, ambiguous situations</td>
</tr>
</tbody>
</table>
How Do Processes Vary by Organizational Scope?

<table>
<thead>
<tr>
<th>Workgroup</th>
<th>Workgroup Example Processes</th>
</tr>
</thead>
</table>
| Sales and marketing   | • Lead generation
                          • Lead tracking
                          • Customer management
                          • Sales forecasting
                          • Product and brand management                                      |
| Operations            | • Order entry
                          • Order management
                          • Finished goods inventory management                                |
| Manufacturing         | • Inventory (raw materials, goods-in-process)
                          • Planning
                          • Scheduling
                          • Operations                                                          |
| Customer service      | • Order tracking
                          • Account tracking
                          • Customer support                                                    |
| Human resources       | • Recruiting
                          • Compensation
                          • Assessment
                          • HR planning                                                         |
| Accounting            | • General ledger
                          • Financial reporting
                          • Cost accounting
                          • Accounts receivable
                          • Accounts payable
                          • Cash management
                          • Budgeting
                          • Treasury management                                                  |
# Characteristics of Information Systems

<table>
<thead>
<tr>
<th>Scope</th>
<th>Example</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workgroup</td>
<td>Doctor’s Office/Medical</td>
<td>Support one or more workgroup processes. 10–100 users; procedures often formalized; problem solutions within group; workgroups can duplicate data; somewhat difficult to change</td>
</tr>
<tr>
<td></td>
<td>Practice</td>
<td></td>
</tr>
<tr>
<td>Enterprise</td>
<td>Hospital</td>
<td>Support one or more enterprise processes. 100–1,000s users; procedures formalized; problem solutions affect enterprise; eliminate workgroup data duplication; difficult to change</td>
</tr>
<tr>
<td>Inter-enterprise</td>
<td>PRIDE System</td>
<td>Support one or more inter-enterprise processes. 1,000s users; systems procedures formalized; problem solutions affect multiple organizations; can resolve problems of duplicated enterprise data; very difficult to change</td>
</tr>
</tbody>
</table>
Q2: How Can Information Systems Improve Process Quality?

• Process efficiency: Ratio of process outputs to inputs.
• Process effectiveness: How well a process achieves organizational strategy.

• How Can Processes Be Improved?
  – Change process structure
  – Change process resources
  – Change both
Information Systems Can Be Used to Improve Process Quality By:

• Performing an activity
  – Partially automated, completely automated

• Augmenting human performing activity
  – Common reservation system

• Controlling process flow
  – Order approval process
Q3: How Do Enterprise Systems Eliminate the Problem of Information Silos?

How Do Information System Silos Arise?

- Data isolated in islands of automation
- Different department goals
- Different personal and workgroup needs
- Duplicate data as organization grows
# Problems Created by Information Silos

<table>
<thead>
<tr>
<th>Problem</th>
<th>Sales and Marketing</th>
<th>Accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data duplication, data inconsistency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disjointed processes</td>
<td>Get Credit Approval</td>
<td>Approve Customer Credit</td>
</tr>
<tr>
<td>Limited information and lack of integrated information</td>
<td>Order Data</td>
<td>Payment Data</td>
</tr>
<tr>
<td>Is IndyMac a preferred customer?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolated decisions lead to organizational inefficiencies</td>
<td>Order Data</td>
<td>Payment Data</td>
</tr>
<tr>
<td>Increased expense</td>
<td>Sum of problems above.</td>
<td></td>
</tr>
</tbody>
</table>
# Information Silos as Drivers

<table>
<thead>
<tr>
<th>Scope</th>
<th>Example</th>
<th>Example Information Silo</th>
<th>Enabling Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workgroup</td>
<td>Doctor’s Office/ Medical Practice</td>
<td>Physicians and hospitals store separated data about patients. Unnecessarily duplicate tests and procedures.</td>
<td>Functional applications.</td>
</tr>
<tr>
<td>Enterprise</td>
<td>Hospital</td>
<td>Hospital and local drug store pharmacy have different prescription data for the same patient.</td>
<td>Enterprise applications (CRM, ERP, EAI) on enterprise networks.</td>
</tr>
<tr>
<td>Inter-enterprise</td>
<td>Inter-agency prescription application</td>
<td>No silo: Doctors, hospitals, pharmacies share patients’ prescription and other data.</td>
<td>Distributed systems using Web service technologies in the cloud.</td>
</tr>
</tbody>
</table>
Q4: How Do CRM, ERP, and EAI Support Enterprise Processes?

Business Process Reengineering

• Integrated data, enterprise systems create stronger, faster, more effective linkages in value chains.
• Difficult, slow, and exceedingly expensive.
• Key personnel determine how best to use new technology.
• Requires high-level and expensive skills and considerable time.
Emergence of Enterprise Application Solutions

• **Inherent processes**
  – Predesigned procedures for using software products
  – Based on “industry best practices”
• Customer relationship management (CRM)
• Enterprise resource planning (ERP)
• Enterprise application integration (EAI)
Customer Relationship Management (CRM)

• Suite of applications, a database, and a set of inherent processes.

• Manage all interactions with customer through four phases of customer life cycle:
  – Marketing, customer acquisition, relationship management, loss/churn.

• Intended to support customer-centric organization.
CRM Applications
ERP Applications
Pre-ERP Information System: Bicycle Manufacturer
ERP Information Systems
ERP Enabled Sales Dashboard
Enterprise Application Integration (EAI)

• Connects system “islands.”
• Enables communicating and sharing data.
• Provides integrated information.
• Provides integrated layer over the top of existing systems while leaving functional applications “as is.”
• Enables a gradual move to ERP.
Design and Implementation for the Five Components

- CRM sends request to manufacturing systems via EAI Server
- EAI Server
- EAI Interface
  - CRM
- EAI Interface
  - Manufacturing systems
- EAI Interface
  - Accounting systems
- EAI Interface
  - Human resources systems

Virtual Integrated Database
Using MIS In-Class Exercise 7: Choosing a CRM Product

1. Act! and GoldMine
   b. Search the Web for “Act vs. Goldmine.” Read several comparisons.
   c. Summarize your findings in a 2-minute presentation. Include intended market, costs, and relative strengths and weaknesses.
Using MIS In-Class Exercise 7: Choosing a CRM Product (cont’d)

2. Salesforce.com and Sugar
   a. Learn about these products, visit [www.salesforce.com](http://www.salesforce.com) and [www.sugarcrm.com](http://www.sugarcrm.com).
   b. Search the Web for “Salesforce vs. Sugar CRM.” Read several comparisons.
   c. Summarize your findings in a 2-minute presentation. Include intended market for these products, costs, and relative strengths and weaknesses.
Ethics Guide: Dialing for Dollars

• Assume you are a salesperson.
• It has been a bad quarter. VP of sales authorized a 20% discount on new orders if customers take delivery prior to end of quarter so order can be booked for this quarter.
• VP says “Start dialing for dollars, and get what you can. Be creative.”
• You identify your top customers to offer discount deal.
Q5: What Are the Elements of an ERP Solution?

- ERP Application programs
- ERP Business process procedures
- ERP Databases
- ERP Training and Consulting
True ERP Have Application that Integrate:
(http://www.erpsoftware360.com/erp-101.htm)

• Supply chain
• Manufacturing
• CRM
• Human resources
• Accounting
ERP Solution Components

• ERP Application Programs
  – Configurable vendor applications.

• ERP Databases
  – Trigger
    ➢ Computer program within the database that keeps database consistent when certain conditions arise.
  – Stored Procedure
    ➢ Enforces business rules.
ERP Solution Components (Cont’d)

• ERP Business Processes and Procedures
  ➤ Adapt to predefined, inherent processes and procedures, or design new ones?
• ERP Training & Consulting
  ➤ Training to implement.
  ➤ Top management support, preparing for change, dealing with resistance.
  ➤ Training to use.
Example of SAP Ordering Business Process Blueprint
Example of SAP Ordering Business Process Blueprint (cont’d)
# SAP Characteristics of Top ERP Vendors

<table>
<thead>
<tr>
<th>Company</th>
<th>ERP Market Rank</th>
<th>Remarks</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epicor</td>
<td>5</td>
<td>Strong industry-specific solutions, especially retail.</td>
<td>Epicor 9 designed for flexibility (SOA). Highly configurable ERP. Lower cost.</td>
</tr>
<tr>
<td>Infor</td>
<td>3</td>
<td>Privately held corporation that has acquired an ERP product named Baan, along with more than 20 others.</td>
<td>Span larger small companies to smaller large companies. Offers many solutions.</td>
</tr>
<tr>
<td>Oracle</td>
<td>2</td>
<td>Combination of in-house and acquired (PeopleSoft, Siebel) products.</td>
<td>Intensely competitive company with strong technology base. Large customer base.</td>
</tr>
</tbody>
</table>
Q6: What Are the Challenges of Implementing and Upgrading Enterprise Information Systems?

- Collaborative management
- Requirements gaps
- Transition problems
- Employee resistance
Q7: How Do Inter-enterprise IS Solve the Problems of Enterprise Silos?
Inter-enterprise PRIDE System
Q8: 2024?

- Expect many acquisitions by the major players such as Oracle and SAP.
- ERP vendors and customers seek application and systems migration strategies to maintain quality service, using the cloud.
- Allowing access via mobile devices.
- Operations and information systems, mobile-cloud-CRM/ERP a great opportunity for future employment.
Using the Security Guide: One-Stop Shopping

• Information systems design involves constant trade-offs.
  – Trade-off of eliminating problems of information silos against security threat of having all data in one repository.
• Under what circumstances is an enterprise system considered the solution?
• Under what circumstances are enterprise systems a source of information silos?
• When machine side of IS has limits and flaws, it’s the human side that picks up the slack.
Using the Guide: ERP and the Standard, Standard Blueprint

- Organization adapts its processes to standard blueprints.
- If all firms in an industry use same business processes, how can a firm gain competitive advantage?
- How will innovation occur?
- Does “commoditized” standard blueprint prevent sustaining a competitive advantage?
Active Review

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Q8: 2024?
Case Study 7: Using the PRIDE Database
Defining the Workout Table with SQL

```
CREATE TABLE Workout (
    WorkoutID int not null identity (1,1),
    WorkoutDate datetime2 not null,
    ElapsedTime float null,
    Distance float null,
    AveragePulse float null,
    TotalCalories float null,
    Remarks varchar(1000) null,
    ProfileID int null,
    PersonID int not null,
    PrescriptionID int null,
    HealthClubID int null,
    ActivityID int null,
    Constraint WorkoutPK primary key (WorkoutID),
    Constraint WorkoutPersonFK foreign key (PersonID) References Person(PersonID) On Delete No Action,
    Constraint WorkoutPrescriptionFK foreign key (PrescriptionID) References ProfilePrescription(PrescriptionID) On Delete No Action,
    Constraint WorkoutHealthClubFK foreign key (HealthClubID) References HealthClub(HealthClubID) On Delete No Action,
    Constraint WorkoutActivityFK foreign key (ActivityID) References Activity(ActivityID) On Delete No Action,
    Constraint ProfileFK foreign key (ProfileID) References Profile(ProfileID) On Delete No Action
);
```
PRIDE, Person, Workout, and Performance Tables
Tables Relating to Exercise Prescriptions
PRIDE All Database Tables
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