Announcements

- Business Paper proposals due today!
- Online Forum in eCommons (new topic this week)
  - alternative way to earn participation points!
  - how it relates to class
  - Use terminology from class
- Assignment 2 is for this Thursday
- Reading for next time:
  - Messerchmitt 3.4 - 3.6 (pp. 83-98)
  - Alibris Case (reader pp. 137-148)

Announcements

Forthcoming presentations

- 1/27/2011
  - Michael William Garcia (news story)
  - Alan Mah (Alibris Case)

- Send me your slides the night before
  - Failing to do so will result on losing points
    (till 9 p.m.)

Outline

- Announcements
- Information Management
- Student Presentation (news)
- Enterprise Applications
- Enterprise Resource Planning
- CISCO case

ISM50

http://www.soe.ucsc.edu/classes/ism050/Winter11/

Instructor

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Information Management

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What is Information?

- Data
  - Numbers, Character strings, etc.
- Information
  - Recognizable patterns of data organized so as to inform or influence the user in some way
- Knowledge
  - Concepts, relationships, truths, principles derived from information
- Wisdom
  - Insight or judgment acquired from extensive knowledge

Classify these

- “XV”, “SF”, 34, “CN”, 16
- The 49-ers won Super Bowl XV by a score of 34 to 16.
- The National Football Conference wins 17 out of 20 Super Bowls on average.
- The best team usually wins.

Classify these

- 47, 560, 134
- My bank account has $47 in it :-(
- My net worth, including my bank account and subtracting the debts is $560
- At the rate my net worth is increasing, and given my age and expectations for retirement income, I can’t retire until age 134...

Roles in information access

- Author or publisher
- Indexer or organizer
- Librarian or teacher or interpreter
- Recommender

In the Networked Era...

User
Author or publisher
Indexer or organizer
Librarian
Recommender

How are these roles being changed by networked computing?

Finding useful information...

- Search
  - Item search
  - Topic search
- Browse
  - Explore in order to find useful information
- Navigate
  - Follow directions/links to find information
  - In web: you do both!
Others can help….

- **Author:**
  - Hyperlink
    - (Reference to related information)

- **Author or third party:**
  - Index
    - (List of content)
  - Metadata
    - (Description of content)

- **Third party:**
  - Reviews or recommendations
    - (Judgment of content)

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**Exercise**

Give an example of the following functions in the context of movie rentals:

- Hyperlink
- Index
- Metadata
- Recommendation

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**Authors – Publishers**

*Creates information - verifies, makes available*

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**Indexers**

*Classifies information*

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**Indexers/Organizers – Librarians**

*(assists and guides user to needed info)*

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**Librarians**
**Recommenders**

**Push vs. pull**

- **User**: Pull
  - Control over what is provided
  - Time when it is provided

- **Publisher (autonomous source)**: Push
  - Intermediate cases:
    - Notification
    - Subscription

Question

What are some differences between push and pull with respect to:
- invasiveness on the user?
- refinement of the information received?
- timeliness with which information received?

**Characteristics of information pull and push**

<table>
<thead>
<tr>
<th>Push</th>
<th>Pull</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>User requests specific information</td>
</tr>
<tr>
<td></td>
<td>User subscribes to information on general</td>
</tr>
<tr>
<td>Notification</td>
<td>User submits question-publisher answers</td>
</tr>
<tr>
<td></td>
<td>Publisher provides useful notifications-</td>
</tr>
<tr>
<td></td>
<td>user decides what to do</td>
</tr>
<tr>
<td>Timing</td>
<td>Information to user directed</td>
</tr>
<tr>
<td></td>
<td>Information provider directed</td>
</tr>
</tbody>
</table>

Proper roles of push and pull in a workgroup

<table>
<thead>
<tr>
<th>Pull: work</th>
<th>Push: attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brainstorming</td>
<td>Notification of topic</td>
</tr>
<tr>
<td>Accessing documents</td>
<td>Notification of document availability</td>
</tr>
<tr>
<td></td>
<td>Reminder of deadlines</td>
</tr>
</tbody>
</table>

Newsgroups and Web                Email
Enterprise Applications

Applications

- What is an application?
  - Computer software that performs useful capabilities for a user or organization
  - Incorporates storage, manipulation, and communication of information.

- An organizational application
  - Supports an organization
  - Often called enterprise application
  - (An enterprise is an organization with a commercial mission)
  - Managing an organization: coordination + communication

- Types of organizational applications
  1. Departmental
     - Supports a single functional department
     - Example: An accounts management application for an accounting department.
  2. Enterprise
     - Support enterprise-wide processes and goals.
     - Example: coordinate information between functional departments involved in fulfilling an order. (or other cross-functional process.)
  3. Commerce
     - Supports the purchase/delivery of goods/services
     - Example: product support over the Internet

Classification of organizational applications

- Worker Collaboration
  - Example: video conferencing

- Operations and Logistics
  - Example: coordinate movements of goods between sites.

- Decision Support
  - Summarize info for execs.

- Knowledge Management
  - Organize and retrieve knowledge in company’s documents and databases

- Customer outreach
  - Network offers new ways to connect to customers

Examples of organizational applications

- Customer care (software4u.com)
  - FAQ - knowledge base
  - Customer service & tech support

- On-line Bookselling (books4u.com)
  - Specialized software to interface with customers, stock exchange, Customer’s bank

- On-line Stock Trading (stocks4u.com)
  - Information provider

- Floral delivery service (flowers4u.com)
  - Suppliers small businesses without IS
Departmental Applications

- On-line Transaction Processing
  - record and process data from business transactions
  - Info resides in Database Management System (DBMS)
- Workflow
  - A workflow application supports ongoing repetitive tasks
  - Example: An application that passes a case summary of a customer from customer service to tech support

Business Process Re-engineering

- Also called Business Transformation
- Radical re-thinking and re-design of business processes
  - Enabled by Networked Information Systems
  - Minimize cost/time, increase efficiency, improve quality
  - Combine what people can do well with what computers can do well
- 5 phases

Business Process Re-engineering

- Analysis
  - of business requirements and costs
- Design
  - of individual activities
  - of information and materials' flow
- Development
  - of application
- Deployment
  - Including training, testing, installation (may have pilots)
- Operations
  - Supporting the application (production, sales, distribution, etc.)
- Analogous to a software application's lifecycle

Enterprise Resource Planning (ERP)

So what exactly is ERP??

Material (Manufacturing) Requirements Planning - MRP

- The precursor of ERP
- MRP: A production planning and inventory control system
  - Take:
    - Product Demand forecasts
    - Inventory Balances
    - Replenishment Lead Times
  - Develop a production schedule for a single plant
**MRP**

- Initially was a planning tool
  - WHAT items are required
  - HOW MANY are required
  - WHEN are they required
- Later other functionalities were added
  - Order Processing
  - Product Costing
- The planning tool begins to take more and more of an active role in the business processes

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**A desire to Link Across Functional Departments**

- Each functional department had its own legacy application
  - Programmed in different languages
  - Different data formats
- Often some data was shared between departments by duplicating it.

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**MRP evolves into ERP**

- ERP applications support different business processes that are standardized across organizations
  - Accounting, sales, HRM, material management, CRM, supply chain management, project management, etc...
- Key features:
  - Multi-functional
  - Integrated
  - Modular

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**Information Integration**

- Key issue
  - Should integrate different data/applications
- CONSTRAINT: Legacy Applications
  - Applications developed using obsolete technology and worked well for many years...
    - e.g., most commercial applications were built using COBOL
    - ...until not anticipated problems occurred
      - e.g., the Year 2000 (Y2K) problem
      - Some applications were built 40 years ago
      - The programmers used last 2 digits to represent the year:
        - "1/1/00" => 1900 or 2000?
  - Y2K made many enterprises replace their legacy systems with ERP solutions

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**ERP**

- How would you design an ERP?
- Design a user interface for each module
  - Ask user to fill in certain "fields" at particular times.
  - Set up a sequence of events
    - E.g. When the sales department enters an order, that event triggers an event at the manufacturing department.

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**Fundamental options**

- Build in-house? using a company’s own funds, staff, or resources
- Customize the off-the-shelf application to existing organization? refers to products that have already been designed and made
- Mold organization to off-the-shelf application?
  - Adapt business processes to “Best practices”
  - When there exist compliance requirements or when process is a commodity
- If all companies use the same “best practices” how can they gain competitive advantage?
The CISCO Case

Break into groups of 3 or 4

- Discuss
  - A) Was the project successful? Why or why not?
  - B) Imagine you were asked to lead an ERP deployment at another company,
    1) What ideas would you borrow from Cisco’s ERP project?
    2) What factors worked in Cisco’s favor that might not apply to other companies trying to do an ERP project?
    3) What mistakes would you avoid that Cisco made?
- Write your ideas down
  - Turn in your answer at the end of the class (extra participation credit)

Cisco Summary

Success Factors
- Cross-Functional Team of top people
  - People from across the company involved
- Hungry Vendors
  - Oracle and KPMG needed this to succeed
- Strong Support from Top Management
- Favorable Hardware Contract
- Rapid Prototyping - conference room pilots
- Aggressive pace
Good management or luck?

Cisco Summary

Challenges
- Poor testing Strategy
- Inadequate Hardware
- Software required more modifications than originally hoped.

Cisco Summary

What did it cost?

- Costs Beyond original budget:
  - Non-IT Personnel In Project
    - 80 personnel X 8 months X 160 hours / month X 100 hour = $10 million
  - IT-Personnel beyond original 20
    - 80 personnel X 4.5 months X 160 hours / month X 100 hour = $5.7 million
  - Actually cost more than 15 million more than the original budget of $15 million!
  - Was this really a success?!