Outline

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

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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.)
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 Bowl’s 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

Adapted from slides for *Understanding Networked Applications* by David G Messerschmitt. Copyright 2000. See copyright notice.
In the Networked Era...

User
Author or publisher
Indexer or organizer
Librarian
Recommender

How are these roles being changed by networked computing?

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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
Authors - Publishers
Creates information - verifies, makes available
Indexers
Classifies information

YELLOWPAGES.COM™
Indexers/Organizers - Librarians (assists and guides user to needed info)
Librarians
Recommenders

COMEDY SUGGESTIONS (68)
- Stranger than Fiction
  Because you enjoyed:
  - Amelle
  - Lost in Translation
  - Big Fish
- Grease
  Because you enjoyed:
  - Look Who's Talking
  - Pretty Woman
  - Sleepless in Seattle
- This Is Spinal Tap
  Because you enjoyed:
  - The Big Lebowski
  - High Fidelity
  - Citizen Kane

DRAMA SUGGESTIONS (159)
- Babel
  Because you enjoyed:
  - Lost in Translation
  - Eternal Sunshine of the Spotless Mind
  - Sideways
- Traffic
  Because you enjoyed:
  - Crash
  - Requiem for a Dream
  - Lost in Translation
- Sophie's Choice
  Because you enjoyed:
  - Capote
Recommenders

What do customers ultimately buy after viewing this item?

74% buy the item featured on this page:
Canon PowerShot A630 8MP Digital Camera with 4x Optical Zoom
$215.40

9% buy
Canon PowerShot A540 6MP Digital Camera with 4x Optical Zoom

7% buy
Canon PowerShot A640 10MP Digital Camera with 4x Optical Zoom
$279.99

5% buy
Canon PowerShot A710 IS 7.1MP Digital Camera with 6x Image-Stabilized Optical Zoom
$259.99

Customers who bought this item also bought
Lexar Media 1 GB Secure Digital Memory Card (SD1GB-231) (Retail Package) by Lexar
Sony BC-G3H-E1 Super-Quick Worldwide Battery Charger with 4 AA NiMH Batteries by Sony
Canon PSC-65 Deluxe Soft Case for A550, A560, A570IS, A630, A640, A700 & A710IS Digital Cameras by Canon
2GB Secure Digital by SanDisk

Explore similar items: Electronics (22) Camera & Photo (13)
Push vs. pull

User

Control over what is provided

Time when it is provided

Intermediate cases:

Notification

Subscription

Push

Publisher (autonomous source)

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

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Student Presentation

1/25/2011

- Scott William Compton (news story)
- Monica J Wang (Cisco Case)
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
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.
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
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
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.
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**
  
  \[
  80 \text{ personnel} \times 8 \text{ months} \times 160 \text{ hours/month} \times 100 \text{ hour} = $10 \text{ million}
  \]

- **IT-Personnel beyond original 20**
  
  \[
  80 \text{ personnel} \times 4.5 \text{ months} \times 160 \text{ hours/month} \times 100 \text{ hour} = $5.7 \text{ million}
  \]

Actually cost more than 15 million more than the original budget of $15 million!

Was this really a success?!