ISM 50 - Business Information Systems
Lecture 6
UC Santa Cruz
April 15, 2010

Class Announcements
- Reading for next time
  - Cisco Case
- Assignment 2 and Folio 1 due today
- Business Paper Proposal Due in 1 week!

Class Announcements
- Project proposals due in 7 days!!
  - 2-3 pages
  - Give a plan what you will cover in report
  - Cite some references, and show that you have started your research!
    - Remember references must be cited in the body of the text with footnotes or end notes.
  - See website for more details.

Student Talks
- Frito-Lay
  - Hand Held Computer Project
    - 3 stated objectives
      - Replace optical scanner system used now
      - IBM will stop supporting it soon
      - $1/2 hour per day per driver paper-work reduction
    - Marketing effectiveness
      - Detailed sales data
        - will help make regional marketing decisions
        - Negotiate with stores for more shelf space

Frito-Lay
- Cost of Implementation (Approximated!!):
  - Data Center upgrade
    - $1.2 million
  - Machinery in Truck
    - 10000 trucks X ~$3000 per truck = $30 million
  - Computers in distribution centers
    - 5-10 million?
  - 45 Systems Development Professionals
    - $70K x 45 = ~3 million
  - TOTAL: 45-55 million
Frito Lay

To have a 10% Rate of Return, what would the benefits per year have to be?
(for simplicity assume these benefits are received every year forever)
~5 million

HHC Project Good Idea?

Yes:
- Replaced optical scanner system that IBM would stop supporting soon
- Saves sales force time: 2.5 hours per week per driver
- Detailed sales data supports:
  - Regionalized marketing
  - Negotiations for shelf space with supermarkets
  - Reduce errors

No:
- Expensive (~50 million)
- Risky
- Might not work technically
- Sales force might not like it
- Already upset about segmentation
- Equipment vendor might not be reliable

Frito Lay

- HHC was a $50+ million project
- How did they mitigate risks?
- Risk Mgmt
  - Pilot test of technology
  - 3 layer rollout
    - 1) essential systems
    - 2) sales compensation
    - 3) strategic uses of new data (fuzzy)

How to mitigate risks?

- Action plan
  - Region by region?
  - All at once?
  - Weakest or Strongest region first?

Frito Lay

HHC deployed to LA area first, a region that won a sales award.
By the end of the 80’s
- HHC deployment completed
- Development of Information Systems to process HHC data to support operations
Early 90’s re-org to decentralize decision making to different regions

1985
- Revenue: $2647
- Profit: $401

2004
- Revenue: $9091
- Profit: $2366
- Revenue growth ~ 6% per year on average

Information access

by
David G. Messerschmitt
A hierarchy

**Data:** numbers, character strings, etc.

**Information:** recognizable patterns organized so as to inform or influence us in some way

**Knowledge:** concepts, relationships, truths, principles.

**Wisdom:** insight or judgement

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.

Roles in information access

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

Exercise

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

How are these roles being changed by networked computing?

Classify these

Related to *A Streetcar Named Desire*:
- Tennessee Williams
- Actor
- Critic
- Playbill magazine

Related to *Understanding Networked Applications*:
- D.G. Messerschmitt
- Morgan Kaufmann
- Amazon.com
**Push vs. pull**

User

Control over what is provided

Time when it is provided

Publisher

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?

**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>

**Exercise**

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

- Hyperlink
- Index
- Metadata
- Recommendation

**Some modalities of information access**

- Search, navigate, browse
- Aggregate, filter, consolidate
- Delegate
- Intermediary

**Aids in finding useful information**

Besides the information content itself, other aids:

- Reference to related information: hyperlink
- List of content: index
- Description of content: metadata
- Judgment of content: recommendation
**Question**

Comment on the following widely held beliefs (at their time):
- "the movie will displace legitimate theater"
- "television will displace movies"
- "remote learning will displace the university campus as we know it"

What does this suggest about networked applications?

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**Enterprise Applications**

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**Applications**

- What is an application?
  - Computer software that performs useful capabilities for a user, organization, incorporating 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)

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**Types of organizational applications**

- **Departmental**
  - Supports a single functional department
  - Example: An accounts management application for an accounting department.

- **Enterprise**
  - Support enterprise-wide processes and goals.
  - Example: coordinate information between functional departments involved in fulfilling an order. (or other cross functional process.)

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**Some Types 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

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**Examples**

**Software Merchant**

- **Customer Relationship Management**
  - Maintain a case file of customer questions and complaints.
  - Website of Freq. Asked Ques. And documentation.
  - Chat application for customers to communicate with tech-support personnel.
Examples

On-Line Stock Trading
- Information Management application for paying customers
- Specialized software to interface with
  - customers
  - stock exchange
  - Customer’s bank

Some More Terms

- *Transaction Processing Systems* record and process data from business transactions.
- *Batch Processing* - transactions are accumulated over a period of time and processed periodically.
- In *Online Transaction Processing (OLTP)*, transactions are processed immediately.

Some More Terms

- A *workflow* application supports ongoing repetitive tasks.
- Example: An application that passes a case summary of a customer from customer service to tech support.

Early MRP

- *MRP (Material or Manufacturing Resource Planning)*
  - Take:
    - Product Demand forecasts
    - Inventory Balances
    - Replenishment Lead Times
  - Develop a Production schedule for a single plant
  - At this Point, it is a planning tool

Later on More capabilities added

- Order Processing
- Product Costing

- The planning tool begins to take more and more of an active roll in the business processes.
A desire to Link Across Functional Departments of firm

- 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

- A common software architecture with modules to support different business functions
  - Accounting, finance, sales, HRM, material management, etc...

- Key features:
  - Multi-functional
  - Integrated
  - Modular

ERP Overview

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
    - When the sales department enters an order, that event triggers an event at the manufacturing department.

- But by doing this, aren't we presuming a particular business process?

Questions

How standardized are organizational processes?
- Customer service
- Finance
- Manufacturing

Fundamental options

- Customize the application to existing organization?
- Mold organization to off-the-shelf application?
- Is software a good way to propagate best practices?