ISM 50 - Business Information Systems

Lecture 7

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Class Announcements

- Business Paper Proposal Due Wednesday!

- Wednesday presentation:
  - Juliana Hyun (Alibris Case)
Class Announcements

- Project proposals due in 2 days!!
  - 1-2 pages
  - Give a plan what you will do
  - Cite some references, and show that you have started your research!
  - See website for more details.
Review of O’Brien Ch 2

- Virtual Company
- Other terminology
- Reminder of O’Brien cases
A Virtual Company

- A form of Organization
- ...that uses telecommunication and other IT to link
  - People
  - Assets
  - Ideas
  - Business partners
- ... in order to exploit a business opportunity
Virtual Company Positives

- Move more quickly

- Combine the products and services of specialized vendors to create something new.

- Might allow company to focus more on offering solutions (products+services) rather than product itself.
Possible Negative Factors

- Will vendors be low enough cost?
  - What about their bargaining power?

- Should the skills and knowledge be developed and maintained in-house?
  - Competitive advantage
  - Future flexibility
Explicit knowledge
- That which can be written down

Tacit Knowledge
- That which is can not be written down
- Example: How to Ride a bicycle.

Much of a company’s value is in its knowledge
- Patents, documents
- Tacit knowledge in employee’s heads
Other terms in Chapter 2

- **Knowledge-Creating Company**
  - Create new business knowledge
  - Disseminate knowledge throughout company

- **Knowledge Management Systems**
  - Facilitate this dissemination
  - Often, like a search engine on a company intranet.

- **Aside:** might a knowledge management system affect the negotiating power of employees?
O’Brien Ch 2 Cases

- WESCO
- Staples
- Hilton Hotels
- Ford Motor Co
- GE
- AVNET Marshall
- Cisco
- Siemens AG
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 - but the term is used for non-profit as well)
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.)
Some Types of Organizational Applications

- **Worker Collaboration**
  - Example: video conferencing, web conferencing

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

- **Decision Support**
  - Summarize info for executives (e.g., market share, stock price, longitudinal trends - digital dashboard)
  - Knowledge Management (e.g., SME guide)
  - Organize and retrieve knowledge in company’s documents and databases (e.g., data warehouse)
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.
  - Problem escalation process
Examples

On-Line Stock Trading

- Information Management application for paying customers
- Specialized software to interface with
  - customers
  - stock exchange
  - Customer’s bank
Examples

University

- Student information system
  - Registration, grades, transcripts, classroom scheduling
- Portal
  - Account information
  - Schedule of classes
  - Advising information
  - Student organizations
  - News
- Learning management system (WebCt)
  - Course syllabus
  - Grading information
  - Office hours
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.
Examples of transaction processing

- **Batch**
  - You purchase something with a *credit card* (or a check) and it is processed with other like transactions once a day

- **OLTP (Real time)**
  - You purchase something with a *debit card* and the amount is immediately deducted from your account
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.
  - Example: An application that moves an admitted student from applicant to enrolled status.
  - Example: A help desk application that tracks a problem from initial report through resolution.
Workflow Applications

The term workflow is used to describe applications that are developed as business processes. (Remember the definition of process?)

Workflow applications can include forms routing and approval, document review and publishing, and issue tracking.
So what exactly is ERP??
Enterprise Resource Planning

- Automation of core business functions
- Interoperable software applications
- Includes hardware and software
- Integrated database infrastructure
- Generally supplied by a single vendor
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 or manually reentering it.
Why ERP?
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
What is software architecture?

“The structure of the components of a program/system, their interrelationships, and principles and guidelines governing their design and evolution over time.”

Source: April 1995, IEEE Transactions on Software Engineering

Components include: communication protocols, user interface, data access, design elements, performance expectations
ERP Overview
ERP Issues

- Avoids long, costly process design - reorganize as needed to use system processes.
- Does not allow for local conditions without system modification.
- Combining existing information from heterogeneous environments into a single application is a challenge.
Considerations for ERP projects

- Have a vision and goals (why are you doing this?)
- Align the project with vision and goals
- Have realistic timelines
- Staff with the right people
- Create a project team - cross functional
- Employ project management methods
- Be prepared to manage change
Current ERP Vendors?

- SAP
- Oracle/PeopleSoft
- Microsoft
- SCT/Sunguard (Universities)
- Many specialized and lower tier vendors
Questions

How standardized are organizational processes?

- Customer service
- Finance
- Manufacturing
Fundamental options

- Customize the application to existing organization?

  OR

- Mold organization to off-the-shelf application?
  - Is software a good way to propagate best practices?
Break
Today’s Student Presentation

- Daniel Meconitas - Cisco Case
Daniel’s slides here
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.
Cisco Discussion....
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
- Aggressive pace

Good management or luck?
Cisco Summary

Challenges

- Poor testing Strategy
- Inadequate Hardware
- Software required more modifications than originally hoped
- Scope control inadequate
Implementation costs

“The cost of ERP is like the weather. Everyone complains about it, but no one does anything about it. “

Source: Donald Burleson - Oracle Consultant/Expert
ERP Cost Considerations

- **Staffing and consulting** - human resource costs may total 3 - 4 times software acquisition costs
- **Training** costs for end users are often underestimated
- IT staffing costs will not decrease
Cisco Summary

What did it cost?

Costs Beyond original budget:

Non-IT Personnel In Project
- 80 personnel × 8 months × 160 hours / month × 100 hour = $10 million

IT-Personnel beyond original 20
- 80 personnel × 4.5 months × 160 hours / month × 100 hour = $5.7 million

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

Was this really a success?!