
TIM 50 - Business Information Systems

Lecture 8

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UC Santa Cruz
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Outline

- Announcements
 - CISCO review
 - ERP
 - Student Presentation (news)
 - E-commerce
 - Alibris case
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Announcements

- Homework 2 due Monday 10/31
 - Forum
 - Topic: Is it possible for a publicly-held corporation in the U.S. today to be socially responsible?
 - Thought experiment
 - Reading for Wednesday
 - Messerschmitt Ch 4
-

Announcements

Forthcoming presentations

- 10/26
 - ??
 - ??
 - 10/28
 - ??
 - ??
-

Announcements

2nd TA now on board

- Varun Raghavan (varun@soe.ucsc.edu) will be coordinating all business paper issues
 - Groups
 - Presenters
 - Topics to cover
 - Send me your presentation slides the night before
 - Failure to do so may result in loss of points
 - We plan to post all student presentations
 - If you want to edit before posting, send in an update
-

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? Or merely self-fulfilling outcome?
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Cisco Summary

Challenges

- Poor testing Strategy
- Inadequate Hardware
- Software required more modifications than originally hoped.
- Is such an emotional investment on the part of upper management healthy?

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?!

Cisco Summary

- **Top Management made it a priority**
 - What effect did this have?
 - Were problems addressed, or merely suppressed?
- **Rapid Iterative Prototyping?**
 - What was this?
 - Was it a good strategy?
 - Was aggressive pace good, or reckless?
- **Project justification**
 - Did they do a RoR or NPV analysis to justify the project?

Review: 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

Student Presentation

- ??
- ?? (Case: Alibris)

Enterprise Resource Planning (ERP)

ERP applications: a networked computing application

- Sophisticated configuration tools and options
- Customizable to local tools

So what exactly is ERP??

1. *Business Modeling Tool*
2. *- Or is it just a Business Model?*
 1. *We are still early in the life cycle of these tools: it may be both, or neither, and different products may be one or the other.*

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

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 unanticipated problems occurred
 - e.g., the Year 2000 (Y2K) problem
 - Some applications were built 40 years ago. Programmers of that era would have been shocked to learn their code would still be in use!
 - 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?
- Collection of modules sharing/exchanging information, triggering remote events
- 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?**

E-commerce

- The buying and selling, and marketing/servicing of products, services, and information over a variety of computer networks.
[O'Brien book]



E-Commerce

- **Major Categories**
 - Consumer (B2C)
 - Example: Amazon.com sells books to consumers.
 - Inter-consumer (C2C)
 - Example: e-bay, real estate
 - Inter-enterprise (B2B)
 - Example:??

E-Commerce Principal Steps

- **Matching buyers and sellers**
 - Who are the available sellers?
 - How do I decide?
- **Negotiating terms**
 - Terms and conditions, i.e. price, delivery
- **Consummation**
 - Order, Fulfillment, Payment
- **Customer service**
 - Assistance in usage, repair or replacements

Matching Buyers and Sellers

Information management

- **Catalog (pull model)**
 - Seller publishes (web) a catalog of goods and services
 - Willing buyers access at their initiative
- **Advertising (push model)**
 - Attach advertisements to other publications or web pages
 - Substantial source of revenue for web sites
 - Example: Spam mail, Banners
- **Intermediary Recommender**
 - Other users recommend a seller/item/service, forums
 - Examples?

Intermediaries?

- **What roles should intermediaries play in the networked age?**
- **Examples?**
 - Amazon, eBay, Travelocity, etc.
- **What intermediary roles may change or even be eliminated?**
 - Travel Agents?
 - Others?

Negotiating Terms

Social applications

- **Fixed price? Why or why not?**
- **Price based on buyer characteristics**
 - History
 - Demographics
 - Behavior
 - Time
 - Availability of item/service
 - Examples?
- **Auctions - price *never* fixed.**

Consummation

- **Order**
 - Buyer conveys an order to the seller wrt the terms
- **Fulfillment**
 - Seller conveys goods to buyer
- **Payment**
 - Buyer conveys payment to seller
- **Security?**
 - Need to ensure both fulfillment and payment occur
 - Use of intermediate

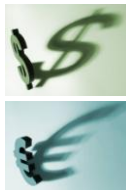
Payment options

(Topic of Chapter 14)

Account transfer authorization

Credit/debit card

Digital cash



What about security?

- **SET:Secure Electronic Transactions**
 - VISA & MasterCard Initiative
 - Customer authentication
 - Precludes merchant from seeing credit card number
 - Precludes financial institutions from tracking purchases

Customer Support

- **Often need to provide post-sales service to the customer**
 - In person
 - Over telephone
 - Via Network
 - Email
 - Remote conferencing
 - FAQ board
 - Automatic distribution of new versions or patches

Customer Relationship Management

- The challenge of maintaining the relationship with a customer is called **Customer Relationship Management** (CRM)
- CRM software applications seek to provide customer facing employees a complete view of each customer.
 - What they've bought and returned.
 - What problems they've reported.
 - What other agents they've talked to in the past.
- An opportunity to add value.

Consumer e-commerce (B2C)

- **What have you bought on the Internet, or what do you buy most often?**
- **What are the advantages and disadvantages compared to a retail store or direct mail catalog?**

Some Advantages

- **For the Consumer**
 - Check prices at many vendors with minimal effort
 - Anonymity
 - Mass customization
 - Order tracking
 - Recommendations
- **For the Business**
 - Global reach
 - Automate order taking (cost savings)
 - Price Discrimination

Recommender Systems

How do they work?



Recommender Systems

- Find users with similar interests/purchases/visits
- See what they have bought/visited/liked that you haven't bought/visited (yet)
- Suggest them!
- Are smart websites the only example of this?

Inter-Consumer E-commerce (C2C)

- What value does something like E-bay add over a simple classifieds listing like craigslist?
 - Ratings of both buyers and sellers
 - Anything else?
- Potential problems?

C2C Examples

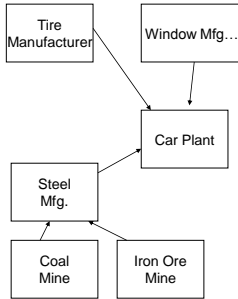


Inter-Enterprise E-Commerce (B2B)

- **Procurement**
 - One enterprise purchases goods or services from another
- **Direct Procurement**
 - Ongoing, consistent, and scheduled procurement
- The relationship between firms involved in direct procurement often called a **Supply Chain**
- The set of problems associated with managing a supply chain is called **Supply Chain Management (SCM)**

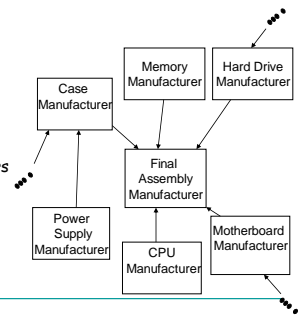
SCM

- **Need to manage the procurement of parts**
 - Don't run out of any one
 - Don't order too many
 - Order far enough in advance
- **Ideally**
 - Know in advance
 - # cars
 - features



SCM

- **Thousands of orders per day, each with different requirements!**
- **Adjusting orders from suppliers constantly according to demand**
- **Minimal inventories**
 - Cut costs
 - Much more sensitive to errors or disruptions
 - Acceptable risk?
- **mass customization (example Dell) requires sophisticated SCM**



Networked Computing in direct procurement

- **Electronic Data Interchange (EDI)**
 - Exchange order information between firms involved in direct procurement
 - Existed since 70's
 - Usually large firms who could afford proprietary communication links
 - Initially order and invoice
- **Financial EDI (FEDI) later added EFT payment capability (electronic funds transfer)**

Networked Computing in direct procurement

- **XML (Extensible Markup Language) is another data interchange format making an impact on inter-enterprise commerce**
 - (We will talk more about this later in the quarter)

Indirect Procurement

- **Sporadic purchase of goods and services to support organizational objectives**
 - Example: Office Furniture

Alibris



Alibris

- How is Alibris different from eBay?
- ...from Amazon?