Outline

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

2\textsuperscript{nd} 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?
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 × 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?!
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
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: eBay, 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

- **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

- 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
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
How is Alibris different from eBay?

...from Amazon?