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

Cisco Summary

Success Factors
- Cross-Functional Team of top people
- Hungry Vendors
- Strong Support from Top Management
- Favorable Hardware Contract
- Rapid Prototyping – conference room pilots
- Aggressive pace

Good management or luck? Or merely self-fulfilling outcome?

Announcements

Forthcoming presentations
- 10/26
  - ??
  - ??
- 10/28
  - ??
  - ??
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
  \[ 80 \text{ personnel} \times 8 \text{ months} \times 160 \text{ hours/month} \times 100 \text{ hour} = \$10 \text{ million} \]
- 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?!

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?**

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

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

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**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

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**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?

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**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.

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?**

  - 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

- [Carsoup](#)
- [eBay](#)
- [Yahoo Shopping](#)

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

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)

Indirect Procurement

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

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

- 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?