**ISM 50 - Business Information Systems**

**Lecture 9**

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*UC Santa Cruz*

*Feb 2, 2010*

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**Class announcements**

- Assignment 3 uploaded on the website. Due Tuesday Feb 9, 2010

- Reading for next class
  - Messerschmitt Ch 5, Sun Case
  - Suggestion: Read Messerschmitt Ch5 first.

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**Student Presentations**

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**E-commerce**

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**E-Commerce**

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

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**E-Commerce Principal Steps**

- Matching buyers and sellers
- Negotiating terms
- Consumption
- Customer service
Matching Buyers and Sellers

- Catalog
  - Seller publishes a catalog of goods and services
  - Willing buyers access at their initiative

- Advertising
  - Attach advertisements to other publications or web pages
  - Example: Spam

- Intermediary Recommender
  - Examples?

Intermediaries?

- What rolls should intermediaries play in the networked age?

- What intermediary rolls may change or even be eliminated?
  - Travel Agents?
  - Others?

Negotiating Terms

- Fixed price
- Price based on buyer characteristics
  - History
  - Demographics
  - Behavior
  - Sequential versioning
  - Examples?
    - (Airlines, Hotwire, TurboTax)
- Auctions

Consummation

- Order
- Fulfillment
  - Seller conveys goods to buyer
- Payment
  - Buyer conveys payment to seller

- Security?
  - Need to ensure both fulfillment and Payment occur.

Payment options

(Topic of Chapter 14)
Account transfer authorization
Credit/debit card
Digital cash

Micropayments
  - Low transaction costs
  - Consolidation

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.

E-Commerce

- Major Categories
  - Consumer (B2C)
  - Inter-consumer (C2C)
  - Inter-enterprise (B2B)

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
  - Price many options
  - Anonymity
  - Order tracking
- For the Business
  - Global reach
  - Automate order taking (cost savings)
  - Price Discrimination

Inter-Consumer (E-Commerce)

- Prime Example
  - E-Bay
- Other examples?
- What value does something like E-bay add over a simple classifieds listing like craigslist?

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
  - All cars
  - Features

Networked Computing in direct Procurement

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

Indirect Procurement

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

Recall, Alibris

- A start-up to sell used books on the Internet.
- Interloc, Alibris' predecessor, functioned like a classified ads page for book dealers
- Alibris changing Interloc's model
  - Actually sell the books
  - Charge a fee per sale (instead of per listing)
  - Intermediary strategy
  - Buy books from dealers
  - Ship to warehouse
  - Re-pack, consolidate order, ship to customer
Alibris

- Why did Interloc succeed so early on?

Alibris

- If Interloc is so successful, why change it?
  - What will change as Interloc becomes Alibris?

Alibris

- Why did Manley feel they needed the Sparks facility?

- How does the Sparks facility keep them from becoming disintermediated?

Alibris

- Should Alibris actually buy books and fill up the Sparks facility?

Alibris

- What problems is Alibris having with its e-commerce capabilities?

- Why is Alibris having so much trouble setting up simple e-commerce capabilities?

- Is this really that hard??

- Is it rare for a new-software product from an established, reputable vendor not to work properly?

Alibris

- Should Alibris stick with Oracle? Or switch back to Thunderstone?
Alibris

- Should Manley take the "white knight's" offer and fire the whole IT staff??!

Alibris

- Rejects "white knight" offer
- Manley secures another bridge loan
- Goes Live 1998
- Thunderstone's software works ok
- 1 million books at Sparks warehouse by 2000
  - Originally all on consignment from dealers
  - Later, purchases books
- 2002 - Revenue $31 million, loss $7.2 million
- 2003 - Revenue $45.5 million, loss $4.8 million
- March 2004 files for "auction based" IPO
  - May 2004, withdraws IPO after price too low
  - Still Relying on Private Financing

Data and information

by
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Key concept

The key commodity manipulated by information technology is information
To be manipulated in a computing/networking environment, information must be represented by data

What is information?

Information

From a user (human) perspective...
...recognizable patterns that influence you in some way
(perspective, understanding, behavior...)
In the computing infrastructure, information has a somewhat different connotation as structure and interpretation added to data
Data

A bit is "0" or "1" — the atom of the information economy

Data is a collection of bits, like

- "0101101101010101"
- "00000011"
- "1101110101101010110111011010"

Note: the terms data and information are not always used consistently!

Representation

- Take the place of the original
- Equivalent to, in the sense that the original can be reconstructed from its representation
- Often the original can only be approximately reconstructed, although it may be indistinguishable to the user
  - e.g. audio or video

ASCII

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<td>E</td>
<td>0100100</td>
</tr>
<tr>
<td>F</td>
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</tr>
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</table>

*Note that this representation is not unique…

...this one happens to be a standard (ANSI X3.41-1983)

A picture

This picture conveys information

This information is represented in this computer, but how?

Representation of picture: image

Expanding a small portion of the picture, we see that it is represented by square pixels...

...300 tall by 200 wide,...

...with a range of 256 intensities per pixel

500 x 200 x 8 bits = 480,000 bits (but it can be compressed)

Color picture

A color picture can be represented by three monochrome images...

At the expense of three times as many bits
**Terminology**

Data → Communication data to another user or organization → Data processing → Information → Data

**Representation needs to be standardized**

Information → Communication data to another user or organization → Information → Data

**Regeneration**
- Make a precise copy of the data (copy bit by bit)
- If you know the representation, this is equivalent to making a precise copy of the information
- Each such precise copy is called a generation
- Process is called regeneration

**Replication of information**

Anything that can be replicated any number of times is a blessing and a curse.

**Analog information cannot be regenerated**

Analog information can be copied, but not regenerated.

We will never know exactly what the original of this Rembrandt looked like.

**Discrete information can be regenerated**

Regeneration is possible for information represented digitally (which is tolerant of physical deterioration):

\[0 + \text{noise} \rightarrow 0\]

\[1 + \text{noise} \rightarrow 1\]
Replication of information requires knowledge of representation

Implications

Digitally represented information can be preserved over time or distance in its precise original form by occasional regeneration

- digital library
- digital telephony

Replication of data is easy and cheap

Implications (con't)

- Replication of information requires knowledge of the structure and interpretation
  - Standardization or some other means
- Extreme supply economies of scale
- You can give away or sell and still retain
- Unauthorized replication or piracy relatively easy