ISM 50 - Business Information Systems
Lecture 3

Course Instructors: Mary Doyle, Geoff Ryder
April 6, 2009

Outline For Today
- Class Announcements
- Student Presentations
- Information Technology and Strategic Competition
- Cash Flow
- Business Process Reengineering intro...

Class announcements
- Due Wednesday
  - Assignment 1: Resume and Cover letter
- For Next time Read:
  - Chapter 2 - Section II of O’Brien

STUDENT PRESENTATIONS
Elliott Ten
Josef Rokicki

Authors and Articles
Michael S. Malone “Newspapers, Hail and Farewell”
Michael S. Malone “How Newspapers Must Change to Survive”
CNN Video “Newspaper Jobs Dying”
Brendan Gupta “The Dying Newspaper”
Lee Bains “Are These Newspapers Going Out of Business?”
WBZ-TV “Are Newspapers A Dying Breed?”
Wikipedia “Seattle Post-Intelligencer”
Gary Kamiya “Death of the News”

News Folio Presentation
- ISM 50
- Elliott Ten
- April 6, 2009
**Main Ideas**

- Newspapers are failing
- Technology changed how we view news
- What do major newspapers need to do to survive

**Newspapers are failing**

- From 2006 – 2008 American newspapers lost 42% of their market value.
- Newspapers are loosing a lot of advertising, their main source of income.
- Craigslist has dominated classified advertising
- The San Francisco Chronicle is soon looking for a buyer
- Seattle Post Intelligencer went web only on March 17, 2009

**Technology changed how we view news**

- Ways to get news using technology
  - Internet source
    - Computer
    - Blackberry/Smartphone
- Advantages of news online
  - Greener
  - Quicker updates
  - Free (mostly)

**What do major newspapers need to do to survive**

- Recognize how everything has changed
- Use technology to deliver news
- Strive to market to eBooks and smartphones
- Convert to web only
- See where they need to be in 10 years, and get there in 5 years.

**Summary of How Article Relates to ISM 50 Concepts**

Old fashion paper newspapers need to get with the times and go electronic to survive. A new method of getting news to people using technology has begun to change and shape a new era of reporting.

**News Folio Presentation**

- ISM 50
- Josef Rokicki
- April 6th, 2009
Global Heroes

March 12th, 2009
The Economist

Illustration by Nick Dewar

Entrepreneurship in a Recession

- Definition of Entrepreneur
- Five Myths of Entrepreneurship
- Fortunes in the Economic Doldrums

Defining the Entrepreneur

- Start a Business
- Innovate
- Disrupt
- Geek?

The Characters, Lewis and Gilbert, from “Revenge of the Nerds”

Five Myths of Entrepreneurship

1) Anti-social geek?
2) Young and Inexperienced
3) Venture Capital
4) Rock the Boat
5) Anti-conglomerates

Treasure in the Economic Doldrums

The Good:
- Unemployed skilled labor
- Cheap office space

The Bad:
- Venture Capital is down 33%
- New Corporate Legislation

How this Effects You

The Ugly:

Bill Gates was worth $100B in 1999
-- Wikipedia
Review of Lecture 2
- History of IT 1960 - ...... (Nolan article)
  - Eras
  - Stages within eras
  - Emergence of IT as a business function
  - The value of networks (Metcalfe's Law)
- Messerschmitt definitions
- Business Functions and Processes (Obrien, Ch. 1)
  - Definitions
  - Case studies

Information Technology and Strategic Competition
- Strategic Advantage
  - Competitive Forces (Porter 5 forces)
  - Competitive Strategies
- Strategic Use of Information Technology
- Internet and the Value Chain

Competitive Forces
- Bargaining power of customers
- Bargaining power of competitors
- Rivalry of competitors
- Threat of new entrants
- Threat of substitutes

Porter Competitive Model
(Identify the Industry and the Specific Market Being Evaluated)

Porter Competitive Model
Education Industry – Universities

Bargaining power of customers and competitors
- Strength in numbers?
- Well-informed about the industry/brands?
- Loyalty/incentives?

What are some examples of the bargaining power of customers, competitors?
Rivalry of competitors

- Number of firms in industry
- Rate of market growth
- Level of differentiation in market
- Diversity of rivals
- Probability of industry shakeout

Threat of new entrants

- Government-created barriers
- Proprietary knowledge to enter
- Little brand differentiation
- Low cost to enter

Threat of substitutes

- Switching costs
- Buyer inclination to substitute
- Price/performance trade-offs (paying more doesn't get you more)

What are some examples of threat of substitutes?

Competitive Strategies

What is the purpose of competitive strategies?

- Cost leadership
- Differentiation
- Innovation
- Growth
- Alliance

Cost leadership

- Low cost production - how?
  - Inventory
  - Staffing
  - Customer cost
  - Competitor cost
  - Production processes
  - What about the role of IT in cost leadership?

Differentiation

- Positive difference between your products/services and the competition
- How can this help reduce the competitor's advantage?
- Establish a niche market
Innovation

- New ways of doing business
  - New/unique products/services
  - Better customer service models
  - Better distribution models

Growth

- Expansion into new markets
- Increased production
- Diversification
- Integrate related products/services

Alliances

- Mergers/acquisitions, joint ventures
- Partnership agreements

Competitive Advantage Concepts

Strategic Uses of Information Technology

What are some examples of use of IT in deploying these strategies?

- Cost Leadership
- Differentiation
- Innovation
- Growth
- Alliance

The Value Chain

An interconnected series or chain of basic activities that add value to a firm’s product or services

- Primary processes
- Support processes

Internet strategies can be developed in both primary and support processes
Value Chain Purpose

- A way of classifying a company's activities and how they help deliver value to customer.

- A framework for evaluating decisions like outsourcing, or deployment of IT.

The Value Chain

Source: Adapted from Michael Porter, "Competitive Advantage," 1985

Examples of IT Supporting Value Chain

Examples of IT Strategies as Applied to Support Processes
- Administrative coordination and support
  - Collaborative workflow/tools
  - Portals
  - Others?
- Human Resources Management
  - Career development intranet
  - Applicant tracking system
  - Others?

Examples continued......

- Technology Development
  - CAD extranet
  - Trouble ticket system
  - Others?
- Procurement
  - E-commerce exchanges for suppliers
  - Purchasing cards
  - Others?

IT Strategies as Applied to Primary Business Processes

- Inbound logistics
  - JIT warehousing
- Operations
  - Computer aided flexible manufacturing
- Outbound logistics
  - Online POS and order processing
- Marketing and sales
  - Interactive targeted marketing
- Customer Service
  - CRM

WHAT EXAMPLES CAN YOU SUGGEST?
Definitions: Net Present Value

- Finding the value of an IT Project

  - Insight: $1 tomorrow is worth less than $1 today.
  - Say the interest rate is 10% per year.
  - The discount factor \( d = \frac{1}{1+i} = \frac{1}{1.1} = 0.91 \)
  - Now suppose we have a stream of payments \( X_0, X_1, X_2, X_3, \ldots \).
  - Then the net present value (NPV) of this stream of payments is computed as

  \[
  \text{NPV} = X_0 + d \cdot X_1 + (d^2) \cdot X_2 + (d^3) \cdot X_3 + \ldots
  \]

Net Present Value Example

- Finding the value of an IT Project
  - Example from the help file, page 2

  - Our NPV model only requires two data: an interest rate, and a stream of payments.
  - Positive numbers are positive revenue.

  - Interest rate \( i = 0.1 \) (purple) or \( i = 0 \) (blue)
  - Estimate that our payments each year are -3M, 1M, 1M, 2M, and zero after that

Net Present Value Example 1

- ROI = 0.24/(3) = 0.08

NPV of an IT Project: How Large Are Gains After 5 Years?
Review: Net Present Value

NPV Business Rules
- If NPV > 0, we choose to do the project
- If NPV = 0, we are neutral (interest rate i for that case is the internal rate of return)
- If NPV < 0, we choose NOT to do the project

Know these terms:
- NPV, and the discount factor (defined 3pp back)
- ROR = the rate of return (just interest rate i in the example). Also the internal rate of return defined above
- ROI = return on investment = (NPV - Cost) / Cost

Examples of the return on investment (ROI) that management might demand from a NPV calculation

<table>
<thead>
<tr>
<th>Institution</th>
<th>Typical ROI Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonprofit Organization</td>
<td>0 %</td>
</tr>
<tr>
<td>IBM IT Services Business</td>
<td>20 %</td>
</tr>
<tr>
<td>IBM Software Business</td>
<td>80 %</td>
</tr>
</tbody>
</table>

Test Your Understanding

Clariant Case, p. 66
- "If any details were skipped, the $2 million project might not have met its 30 to 40 percent internal rate of return.” Assume even payments over years 1 - 4, and zero afterward. How large are these payments?

WESCO Case, p. 71
- "The company could save $12M annually... Considering that it cost $400K to implement..." Assume even payments over years 1 - 4, and zero afterward. What is the internal ROR?

Test Your Understanding

Siemens AG Case, p. 90
- "The tool, which cost only $7.8M, has added $122M in sales.” Assume even payments over years 1 - 4, and zero afterward. What is the internal rate of return?

A few Information System Categories...

Transaction Processing Systems
- Record and Process data resulting from business transactions
- Example: Credit card trans. processing
  2 types
  - Real-time
  - Batch-Processing
An example: Process Control Systems
- Monitor and control physical processes
- Example:

An example decision support systems

What is Business Process Reengineering?
- A fundamental rethinking and redesign of business processes
- Minor improvement to a business process is often called streamlining the business process

Business Process Example

A Streamlined Business Process

A Reengineered Business Process
Role of Information Systems in Business Process Reengineering?

- IS often enables complicated business processes be made more simple.
- IS doesn’t always drive business process reengineering though...

GE Case Study, page 85 in the Reader

- Six Sigma Quality: "define, measure, analyze, improve, control"—and IT enables many of those activities
- Implemented by a famous CEO...

Results: Business Information Systems Drive Improvement

<table>
<thead>
<tr>
<th>Market Value Rank</th>
<th>Company Name</th>
<th>Sales per Laytner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Electric</td>
<td>$49,042,000</td>
</tr>
<tr>
<td>10</td>
<td>Microsoft</td>
<td>120,684</td>
</tr>
<tr>
<td>18</td>
<td>Boeing</td>
<td>32,966</td>
</tr>
<tr>
<td>22</td>
<td>IBM</td>
<td>11,898</td>
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<tr>
<td>27</td>
<td>Philips</td>
<td>10,931</td>
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<tr>
<td>54</td>
<td>Pfizer</td>
<td>5,639</td>
</tr>
<tr>
<td>111</td>
<td>Procter &amp; Gamble</td>
<td>202,267</td>
</tr>
<tr>
<td>460</td>
<td>Wal-Mart Stores</td>
<td>51,446</td>
</tr>
<tr>
<td>150</td>
<td>Johnson &amp; Johnson</td>
<td>12,089</td>
</tr>
<tr>
<td>79</td>
<td>American Int Group</td>
<td>13,455</td>
</tr>
</tbody>
</table>

Source: Standard & Poor’s Compustat. Figures are book values and S&P helps to avoid periodic cycles.

The GE Saga: Jack Welch, Jeff Immelt

- Jeff Immelt: take risks or else
  http://www.businessweek.com/magazine/content/05_13/b3926088_mz056.htm
- Jack Welch is wrong for the times (2006)
- Jack Welch is the #1 CEO in America (1998)

TO DO:

Today (April 6th):
- Business Paper Preferences
  - (Group members, Companies)
  - Turn in as a group
  - By paper, or email to Peter

By Wednesday (April 8th):
- Finish Reading all O’Brien Sections
- Homework I Due: Resume & Cover Letter
  - Turn in as an individual, one paper copy

By Monday (April 15th):
- Read “Frito-Lay Case” (93-103 + figs) in Course Reader