TIM158
Business Information Strategy

Instructor: Safwan Shah

Teaching Assistant: Jing Du

To maintain consistency.
Lectures throughout TIM158 adapted or borrowed from Kevin Ross.
Additional material added as needed.
Lecture 7

Making the Case for IT
(Chapter 4)
Business Case Assignment

• Due by 2 May, 2013
• Optional early draft Sunday April, 28
Today

• Making the IT investment case
• Financial measures
• Intro to group projects
Making the Case for IT

Key Learning Objectives for Chapter 4:

1. Recognize that IT impacts the business model through its effects on sources of business value: costs, revenues, and assets
2. Learn how to analyze and document how IT can potentially impact value sources
3. Understand the importance of effective execution and monitoring in the delivery of IT-enabled business value
Today’s Outline

• Economic Measures
• Justifying expenditure on IT
  – As infrastructure cost
  – As profit driver
  – As proprietary advantage
• SABRE
• Building a Business Case
Where to turn?

• For IT

• For Strategy
- IT is ubiquitous not scarce
- IT is infrastructure not proprietary
- The Internet is accelerating the rate of commoditization of new IT applications
Main Ideas

• Competitive Advantage from IT is possible, but challenging

• ‘IT Doesn’t matter’ .... It depends.
Arguments for IT

- New applications give competitive advantages
- Open standards, reliable infrastructure give rise to more innovation
- IT can give both operating efficiencies and business insight
- Reusable modules, shared middleware, common interfaces get around traditional pitfalls
Role of infrastructure

• Examples of traditional infrastructure
  – What value do they create?
    • Barrier to entry
    • Ability to scale
    • One time expense
  – How do businesses account for them?
Role of infrastructure

• IT infrastructure
  – Specific IT operations (data center, network, call centers)
  – Support for enterprise processes (procurement, ERP, finance, HR)

• Value creation
  – Efficiency
  – Speed to market
  – Flexibility
Proprietary Advantage

• More than just cost-cutting!
• Must change competitive positioning
  – Successful entry into growing market or exit from shrinking one
  – Achieving top position in attractive industry and sustaining it
  – Attracting loyal investors
• Very few competitive advantages are sustainable!
Legacy Issues

• IT Spending is increasing...
...but often 80% is maintaining and managing the existing infrastructure
Business Case for IT

- Investments in reusable, value-enabling infrastructure lower costs, improve asset efficiency and create strategic options for future growth
- Investments in **value-creating** IT applications drive profitable growth through further cost reductions and revenue generation
- **Value-sustaining** IT applications and infrastructure provide strategic differentiation and proprietary advantage
Imagine selling tickets without a computer …

• Atomic
• Consistent
• Isolated
• Durable
1957
• IBM and American Airlines team up to form SABRE, the Semi-Automatic Business Research Environment. It's based on SAGE, the Semi-Automatic Ground Environment -- the first major system to use interactive, real-time computing -- which IBM helped develop for the military.

1960
• The first Sabre reservation system is installed in Briarcliff Manor, N.Y., on two IBM 7090 computers. It processes 84,000 telephone calls per day.

1964
• The Sabre system, and its nationwide network, is completed at a cost of $40 million and becomes the largest commercial real-time data-processing system in the world. It saves American Airlines 30% on labor costs.
1972
• The Sabre system is upgraded to IBM S/360 and moved to a new consolidated computer center in Tulsa, Okla. It is used for all of American Airlines' data processing facilities.

1976
• The Sabre system is installed in a travel agency for the first time, triggering a wave of travel automation. By the end of the year, 130 locations have the system.

1984
• Sabre introduces BargainFinder, the industry's first automated low-fare search capability. Competitors sue American Airlines, saying its Sabre system unfairly gives its flights priority on the displays seen by travel agents. American agrees to discontinue any preferential treatment of its flights.
1985
• Sabre introduces easySabre, allowing consumers with PCs to tap into the Sabre system to make airline, hotel and car rental reservations.

1989
• On May 12, the ultrareliable Sabre system goes down for 12 hours. The cause: a latent bug in disk-drive software that destroys file addresses.

1996
• Sabre launches Travelocity.com.

2000
• AMR Corp., the parent of American Airlines, spins off The Sabre Group as an independent company.

2001
• Sabre Holdings Corp. begins migrating its massive, 25-year-old mainframe system for air-travel shopping and pricing to HP NonStop servers and Linux servers.
Using Business Models to Frame the Business Case for IT

Can IT create sustainable advantage?

- Can IT drive revenue growth?
- Can IT drive asset efficiency?
- Can IT drive cost savings?

Capital Efficient
Profitable Growth

Investor confidence

Market Value

Can IT enable a "virtuous cycle" of innovation, productivity and increasing returns?

(c) Lynda Applegate 2009
Important Financial Measures

• Return on Investment / Rate of Return

• Return on Equity

• Return on Assets

• Internal Rate of Return
Return on Investment

- Also known as rate of return
  = ratio of money gained/lost to investment amount

- Eg.
  - Invest $1,000 at start,
  - end with $1,075

  - Return on investment = 75/1000 = 7.5%

- Often annualized ROI is used
Return on Equity

= Return on net worth
Measures the return to common stockholders

ROE =

Net Income / Average stockholder’s equity
Return on Equity

Question
Say there are 1 million shares available in a company, and the current stock price is $2.50, and the company makes a profit of $100,000.

What is their return on equity?
Return on Equity

Answer

There are 1 million shares available in a company, and the current stock price is $2.50

Then the equity in the company is $2.5m

If that company makes a profit of $100,000, then the return on equity is

\[
\frac{100,000}{2,500,000} = \frac{1}{25} = 4\%
\]
DuPont Formula to Deconstruct Return on Equity

\[
ROE = \frac{\text{Net Income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Shareholders' Equity}}
\]
Profit Margin

Profit Margin = Profit / Revenue

Eg. Say a company makes $1m in revenue each year, and has costs of $800,000

Then the profit margin is

200,000/1,000,000 = 20%
Asset Efficiency

Asset efficiency = Revenue / Assets

Say a company makes $1m in revenue, and has $4m worth of assets (equipment, real estate, etc.)

Then their asset efficiency is $1/4 = 25\%$
Leverage

Leverage = Assets / Shareholder equity

Say a company owns $4m in assets. They have shares outstanding worth $10m

Then their leverage is 4/10 = 40%
Return on Assets

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} = \text{Profit Margin} \times \text{Asset Efficiency}$$
Return on Assets

ROA = Net Income / Total Assets

Example
Say a company owns data centers and real estate worth $5m
If they make $1m in net income, then they have a 20% return on assets
Time Value of Money

• The present value of something is its value in today’s dollars

• Eg. Having $110 a year from now is equivalent to having $100 if the bank is giving 10% return

\[ PV = \frac{FV}{(1 + r)^n} \]
Net Present Value

• Value of cash flows in today’s dollars

\[
NPV = \sum_{t=1}^{n} \frac{C_t}{(1 + r)^t} - C_0
\]

Where

- \( t \) - the time of the cash flow

- \( n \) - the total time of the project

- \( r \) - the discount rate

- \( Ct \) - the net cash flow (the amount of cash) at time \( t \).

- \( C_0 \) - the capital outlay at the beginning of the investment time (\( t = 0 \))
Internal Rate of Return

- Annualized effective compounded return rate

= Discount rate that results in net present value of zero from series of cash flows

\[
\text{Initial Investment} = \sum_{t=1}^{N} \frac{C_t}{(1 + IRR)^t}
\]
Comparison with financial options

• Security option:
  – The right to buy a security at a fixed, predetermined price (called the exercise price) on or before a fixed date (called the maturity date)

• Eg. The right to buy (up to) ten Google Stock, one year from today for $600 each
Group projects

- Groups of 2-3 or 4
- Select a company with 1000+ employees
- The project will involve assessing the strategic use of IT at your chosen company.

Email your group and company preference to the TA (Jing DU) by the end of this week

No two groups will study the same company, so priority will be given to the first group
News Presentation

• Individually or in groups of 2 or max of 4.

• Pick a technology/IT related topic that is of interest.
• Schedule a day to present with the TA
• Come prepared to class with the presentation on your laptop or bring a USB drive to use the instructors laptop.
• Present so that each group member speaks.

• 5-7 minutes duration total.

• Size of presentation - about 4-10 slides.
Business Case Assignment (from 5 to 12 pages)

- Individually or in groups of 2 or 3 or 4 (work of each member should be called out).
- Pick a business case topic that relates to IS/IT and general technology.
- A business case is an argument why an organization should make a change, usually including spending money to get there.
- It includes a description of the business problem or opportunity, the costs and benefits of each alternative solution, and the recommended solution for approval.

- The business case topics could be as follows - (only as reference ... you can choose from these or craft your own but get approval from TA or instructor) -
  - UC Santa Cruz should go paper free
  - Apple should launch a TV
  - Amazon should acquire a retail chain like Sears or ..
  - Google should give free internet to the world
  - ....
Final Project (from 15 o 25 pages)

- In groups of 2 or 3 or 4 or 5 (work of each member should be called out).

- Select a large company with over 1000 employees (publicly traded so you can access information easily) and analyze it over several dimensions like strategy, culture, markets served, financial performance, etc.

- How they use IS/IT to get competitive advantage?
- how they innovate and why is that interesting?
- Will they be around in 10 years? Bigger, smaller, dead, absorbed?

- Give your insight into company strategy.
Next Week

• CareGroup
  – Spectacular collapse for 3.5 days of all IS support in a Boston hospital
    • Why did it happen?
    • What are the learnings?