MBA9009

Strategic Information Systems
Planning Part 1

Going-in Assumption

• that you already know a lot about strategic business planning

• so
  – the major focus tonight is on distinctive features of IS planning

Methodologies and Models?

• by the score…
  – a “popular” example
Key Issues/Concepts in the SISP literature

- that IT (ICT) is “intrinsically” strategic
- that IT can be applied to gain competitive advantage
- that the IS portfolio can be construed as a “capability” (resource-based theory) - systems integration a key theme
- that IT should be “aligned” with the organization - strategies and structures
- that IT has a dynamic relationship with organizational structures (BPR, business reengineering)

a SISP historical timeline

- 1980s-early 1990s: competitive advantage theory
- 1990s: organization transformation
- mid 1970s-2000s: enterprise systems
- late 1990s-2000s: strategic alignment
Coverage

• we will look at IT planning issues pretty broadly this lecture, apart from
  – e-commerce, e-business etc. are very well covered in the lecture sequence elsewhere so will only mention them in context
  – you probably cover reengineering elsewhere in the course but there will be a few words here from the IS perspective

a recent claim in HBR

• that “IT doesn’t matter”
  – a lot of business managers have picked up on this, largely for historical reasons
    • Stewart et al (Letters to the Editor, HBR, June 2003)

• the “true” picture is pretty complicated

Historical Reasons?

• IT and organizations had an uneasy relationship for many years

• outsourcing was once described as “the revenge of the organization on the IT department”
  – many “old school” managers have been happy to seize on the view that IT no longer rates
Justification?

• competitive advantage theory has largely been discredited
• reengineering was hardly a panacea for organizational ills
• systems integration has had a chequered history
• strategic alignment is not a real grabber….

The IT Planning Problem

• understanding follows innovation
  – nobody understands the implications of an innovation at the time it occurs
  – unless there is somebody in the class who foresaw spam ten years ago?
  – strategic IT timeframes are still quite long and that’s a problem: you understand better at the end than the beginning
• but we can be historically and analytically wise….

IS Planning Relationships

• a key (loosely defined) distinction can be drawn between IT/IS infrastructure strategies and business-related strategic IS planning as follows
  – 1 designing and managing IT and IS structures as general-purpose corporate assets
  – 2 planning and scheduling applications which will assist with the realisation of corporate business strategies
“Interference” in Planning

- there is in many organizations a real tension when undertaking IT planning between:
  - 1 designing an effective, manageable IT infrastructure (which now includes enterprise software packages such as SAP, Peoplesoft etc.) and
  - 2 meeting more expedient requirements such as (eg) providing urgent ebusiness support

The IS Planning Hierarchy - personal experience

What the Hierarchy Means

- IS are both part of an infrastructure and individual strategic assets - this creates some little-understood problems as they may generate incompatible objectives
- ideally upper-level plans “constrain” lower-level plans
  - an infrastructure plan will constrain a business unit from installing a system based on a software/hardware combination which deviates from company standards
- all decisions to buy/build individual systems are normally taken within an infrastructure planning “context”
the IT Infrastructure Planning Context

• what this means is that even the choice/design of a key system (at the individual level) will be constrained by the need to recognize system structures and plans already in place

• thus the design/selection process must include:
  – an assessment of how the new system will “fit into” existing structures and plans
  – if the system is selected despite incompatibilities there needs to be some recognition of the extent to which other plans might be derailed

a “Classic” Example

• reengineering was perhaps the classic example of a strategic approach that (often) fell between two stools
  – many reengineering initiatives were targeted at specific business objectives
  – the changes required were essentially infrastructural
    • though when it worked, it often worked well…

An Accident Management System (late 1970s-Style)
A Reengineered Accident Management System (1990s-Style)

New accident → Report accident → Towtruck arrives

Towtruck Management System

Vehicle to repairer → Database → Exit

SISP in Historical Context

• in the following we look at the major theoretical developments and assess their significance today

1 - Competitive Advantage Theory

• received its major impetus from a paper by Michael Porter published in 1985


• Porter’s name gave the idea the sort of intellectual credibility that IS often lacked

  - the insight was the importance of information to business and the consequent possibility of information-based strategies
Classic Example: “Economost”

- McKesson = pharmaceutical drug wholesaler
- operated with a standard sales approach
  - the sales force were “on the road” dealing directly with buyers
  - they would negotiate sales agreements (including discounts etc.) and place the orders
- facing competition from chain stores able to deal directly with manufacturers, and to cut pharmacies out of many profitable lines

“Economost”: 1975-1992

- “Economost” was an electronic order entry system
  - customers issued with scanners (or other portable I/O devices) could enter their orders directly
  - McKesson were able to deliver next day goods packaged to meet pharmacy requirements for restocking in one pass - price stickers and bar coding also provided
- 93% of over-the-counter and 99% of pharmaceuticals provided within a day of the order being placed

McKesson benefits

- customer order entry more rapid, accurate & cost-effective
- # of order entry clerks went from 700 to 15
- sales personnel halved in number: orders *6
- the number of warehouses was halved
- warehouse productivity up by a compounding 17% over a decade
- 1975-1987, McKesson’s sales increased by 424% (from $922M to $4.8B) while operating expenses increased by only 86%
Competitive Implications

- an Economost-like system became a “strategic necessity”
  - the rules of competition in the industry changed
- “copycat” strategies were uniformly successful
- McKesson’s “first mover” advantage did not last very long
  - some copycats are more successful than McKesson
- ultimately Economost benefited the whole industry (including retailers) more than it benefited McKesson specifically

“Imitability” of IT Innovations

- two key issues
  - the “sustainability” of an advantage
  - problems of strategic necessity (“must” copy)

Sustainability

- an advantage must last long enough to justify the investment
  - IT ROI timeframes traditionally 4-7 years
  - this is too long - time to market now has to be quicker
    - major risk of being copied or “leap-frogged”
Strategic Necessity

- telecommunications billing
  - the current (3rd) generation Telstra billing system required a massive investment over a period of 5-6 years (~$1B)
  - the system was a strategic necessity
    - all the different types of special offer to which we have become accustomed require a sophisticated billing capability

Strategic Necessity

- ultimately, some IT innovations simply raise the ante for competing
- it becomes essential because the consumers expect it, or because the rules of the industry have changed
  - internet banking?

Innovation Inhibitors

- cost/benefit timelines
- gaps in the IT knowledge of the business
- IT “track record”
- gaps in business managers’ understanding of IT
- “imitability”
Competitive Advantage Today

• stories of substantial competitive advantages being achieved through IT have dried up to a large extent
• defensive investment levels are on the rise, as organizations seek to protect themselves against their competitors’ activities
• many of the most important systems now are those which provide marginal advantages where IT has been traditionally strongest
  – cost reductions and improved efficiency

2 - Organizational Transformation

• recent dramatic changes in the business environment include major shifts in concepts of organization
  – network forms of organization
  – joint ventures
  – “team-based” concepts
  – “distributed” organizations
  – “hypocritical” organizations
  • these all assume the extensive use of IT
  • many theorists recommend that IT should drive organizational transformation...

IT as an “Enabling” Technology

• business reengineering (one possible theory) is an IT-enabled form of organizational transformation based on rethinking core processes
  – as the enabler, IT makes it possible to redesign processes from the ground up without being constrained by time and geography
Business Reengineering

- Radical business engineering is designed to result in a form of organizational transformation
  - Reengineering still a fashionable IT-enabled strategy

- Michael Hammer as the leading theorist
  - “Don’t automate, obviate!” - he has since resiled a little from that position but not by much
  - “Everything looks obsolete to a hammer who’s a man”
  - “If I had a hammer, I’d hammer in the evening, I’d hammer all over this land”

Information Systems Integration

- The logic of reengineering leads inevitably to the idea of an integrated IT infrastructure

- It also leads (but less obviously) to a requirement for an integrated IS portfolio

“Traditional” Business Process Structures

- “Silo” Structures
Information System Structures

- these systems were standalone or independent suites
  - this meant that even if a function was logically the same in two different systems
  - data definitions could be inconsistent
  - data structures could be inconsistent
  - IS processes (including data validation processes) could be inconsistent

Reengineered Process Structures

- the doubters and questioners
  - organizations
    - do not operate in equilibrium
    - are dynamic evolving structures - IT strategies must accommodate this fact
    - must be designed to accommodate some level of irrationality and sub-optimal performance
3 - Integrated Systems

• systems integration has been an IT dream since the early days of IS
  – papers dating back before 1970

• solutions for the “pure technology” component of integration are available
  – technological progress is the enemy here!

IS Integration

• this has been a different story

• various attempts have crashed over the years
  – the “enterprise system” concept is the latest incarnation of the theory
  – the interesting question is the viability of the strategy long-term

Enterprise Systems

• many problems in this area

• some people see ERP as having “solved” the transaction processing issue
  – BUT
    • there is no reason to think the legacy systems issue has gone away
Enterprise System Questions

- what about the rest of the company?
- can organizations live on vanilla?
- is customization affordable?
- what happened to change management?

IS Failures - the Assignment

- next file