Information Systems Planning

Chapter 4

Information Systems Management In Practice 7E
McNurlin & Sprague

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Chapter 4

• Systems planning, especially strategic systems planning, is becoming more difficult and more important at the same time. Technology is changing so fast that it is seems futile to plan for it, yet the dependence on this technology makes planning its effective use a matter of organizational life and death
• This lecture / chapter contrasts the traditional view of planning with the sense-and-respond approach of strategy-making, presenting seven IS planning techniques

Today’s Lecture

• Introduction
  – Types of planning
  – Why is planning so difficult?

• The Changing World of Planning
  – Traditional Strategy-Making
  – Today’s Sense-and-Respond Approach

Today’s Lecture cont.

• Seven Planning Techniques
  – Stages of Growth
  – Critical Success Factors
  – Competitive Forces Model
    • Five Forces Analysis of the Internet
  – Value Chain Analysis
  – E-Business Value Matrix
  – Linkage Analysis Planning
  – Scenario Planning

Introduction

• IS management is becoming more difficult and more important at the same time:
  – Technology changing so fast: “Why bother?”
    Vs. Most organizations’ survival is dependant on technology
  – Is it good news or bad news?

Introduction cont.

• It is important to establish the appropriate mindset for planning:
  – Some managers believe = “determining what decisions to make in the future”
  – Better view = developing a view of the future that guides decision making today
  – Strategy Making
    • Strategy = stating the direction in which you want to go and how you intend to get there
    – The result of strategy-making is a plan
Why Planning Is So Difficult

Types of Planning:
- Planning is usually defined in three forms, which correspond to the three planning ‘horizons’. (Figure 4-1)
  - Strategic = 3-5 years
  - Tactical = 1-2 years
  - Operational 6 months – 1 year

Introduction cont.
- Why Planning Is So Difficult?:
  - Business Goals and Systems Plans Need to Align
    - Strategic systems plans need to align with business goals and support those objectives
    - Some believe = “too sensitive” = PROBLEMS
  - Technologies Are Rapidly Changing
    - How can you plan when information technologies are changing so rapidly
    - Continuous planning?
    - Old days of planning at ‘start of year’ = gone
    - Advanced technology groups

The Changing World of Planning
- Internet etc. = ‘introduced’ speed into the business environment and transformed how people think about time, how much time they have to plan, react to competitors etc.
- Traditional Strategy-Making:
  1. Business executives created a strategic business plan = where the business wanted to go
  2. IS executives created an IS strategic plan = how IT would support the business plan
  3. IT implementation plan created = describe exactly how the IS strategic plan would be implemented
- Assumptions:
  - The future can be predicted
  - Time is available to do these 3 parts
  - IS supports and follows the business
  - Top management knows best
  - Company = like an ‘Army’

Introduction cont.
- Why Planning Is So Difficult cont.:
  - Companies Need Portfolios Rather Than Projects
    - Evaluation on more than their individual merit
    - How they fit into other projects and how they balance the portfolio of projects
  - Infrastructure Development is Difficult to Fund
    - Despite everyone “knowing infrastructure development is crucial”, it is extremely difficult to get funding just to develop or improve infrastructure
  - Responsibility Needs to be Joint
    - Business planning, not just a technology issue
  - Other planning issues
    - Top-down Vs. bottom-up; radical change Vs. continuous
    - Planning culture

The Changing World of Planning cont.
- Today, due to the Internet and other technological advances, these assumptions no longer hold true:
  - The future cannot be predicted
    - Who predicted Internet, Amazon, eBay etc.?n
  - Time is not available for the sequence
  - IS does not JUST support the business anymore
  - Top management may not know best
    - Inside out Vs. outside in approach (Figure 4-3)
  - An organization is not like an army
Today’s Sense-and-Response Approach

If yesterday’s assumptions no longer hold true, what is taking the ‘old’ approach’s place?

- Let Strategies Unfold Rather Than Plan Them:
  - In times of fast paced change (like today!) this is risky
  - When predictions are ‘risky’, the way to move into the future is step by step using a sense-and-respond approach
    - Sense a new opportunity and immediately respond via testing it via an experiment
    - Myriad of small experiments (Figure 4-6)
- Formulate strategy closest to the action:
  - Close contact with the market
  - Employees who interact daily with customers, suppliers and partners
  - Employees who are closest to the future should become prime strategists. In the ‘Internet Age’ = younger employees

The Changing World of Planning

- Abandoned proprietary network despite big $ when it did not capture enough customers
- Moved on to buying Internet Companies as well as aligning with Sun to promote Java
- Over time = moved into a variety of technologies:
  - Web, Cable news, Digital movies, Cable modems, Handheld OS, Video server, Music, Multiplayer gaming
- Not all came from ‘top management’ e.g. first server came from a ‘rebel’ project
- Getting its fingers into every pie that might become important
  - Missed some – paid $$$ later

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Case example: Sense and Respond Strategy-Making

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Today’s Sense-and-Response Approach cont.

If yesterday’s assumptions no longer hold true, what is taking the ‘old’ approach’s place? cont.:

- Guide Strategy-Making with a ‘Strategic Envelope’:
  - Having a myriad of potential corporate strategies being tested in parallel could lead to anarchy without a central guiding mechanism
  - Top management set the parameters for the experiments, and then continually manage that context
  - Need to meet often to discuss:
    - Shifts in the marketplace
    - How well each of the experiments is proceeding
    - Gaining ‘followership’ or showing waning interest?

Today’s Sense-and-Response Approach cont.

If yesterday’s assumptions no longer hold true, what is taking the ‘old’ approach’s place? cont.:

- Be at the Table:
  - IS executives have not always been involved in business strategising
  - This situation is untenable in today’s ‘Internet-driven’ world.
  - Note: first = need to make department credible

- Test the Future
  - Need to test potential futures before the business is ready for them (thinking ahead of the business)
  - Provide funding for experiments
  - Have an emerging technologies group
Today's Sense-and-Response Approach cont.

If yesterday’s assumptions no longer hold true, what is taking the ‘old’ approach’s place? cont.:

• Put the Infrastructure in Place:
  – Moving quickly in Internet commerce means having the right IT infrastructure in place.
  – The most critical IT decisions are infrastructure.
  – Recommended that IT ‘experiments’ include those that test ‘painful’ infrastructure issues such as how to:
    • Create and maintain common, consistent data definitions
    • Create and instil mobile commercial standards among handheld devices
    • Implement e-commerce security and privacy measures
    • Determine operational platforms (ERP, Supply Chain Management, ....)

Seven Planning Techniques

1. Stages of Growth
2. Critical Success Factors
3. Competitive Forces Model
4. Value Chain Analysis
5. E-business Value Matrix
6. Linkage Analysis Planning
7. Scenario Planning

1. Stages of Growth cont.

“Technological discontinuity” – It occurs when proponents of the proven old dominant design struggle with the proponents of alternative new and unproven designs. Inevitably, one new dominant design wins out.

• Importance of the theory is understanding where a technology or company resides on the organizational learning curve
  – e.g. too much control at the learning and experimentation stage can kill off new uses of technology

• Different technologies are in different stages at any point in time

2. Critical Success Factors

• Popular planning approach that can be used to help companies identify information systems they need to develop/ improve

• For each executive, CSFs are the few key areas of the job where things must go right for the organization to flourish

• Time dependent (must be re-examined)

• Four sources:
  – industry the business is in,
  – company itself and situation within industry,
  – environment (consumer trends), and
  – temporal organizational factors (inventory)

• Monitoring (keeping abreast of ongoing operations)

Vs. Building (tracking the progress of "programs of change" initiated by the executive) CSFs

3. Competitive Forces Model

Companies must contend with five competitive forces which you need to analyse (Figure 4-6):

1 Threat of new entrants (Travel Web sites are a threat to travel agencies)

2 Bargaining power of customers and buyers (Web-based auction sites, shopping bots are giving buyers more shopping options and help the buyers seek lower prices and higher quality)
Competitive Forces Model
(Contd.)

3 Bargaining power of suppliers (The Internet enables small companies to compete against large ones in uncovering requests for bids and bidding on them)

4 Substitute products or services (Email for paper mail, Music downloads for CDs)

5 The intensity of rivalry among competitors

3. Competitive Forces Model cont.

- Three strategies for dealing with these competitive forces:
  1. Differentiate product and services - make them “better” in the eyes of the consumer
     - Probably the most popular of the 3 strategies
  2. Be the lowest-cost producer - not just a low-cost producer
  3. Find a niche - e.g.: geographical market

4. Value Chain Analysis

- Five primary activities that form the sequence of the value chain:
  1. Inbound logistics: receiving and handling inputs
  2. Operations: converting inputs to the product/service
  3. Outbound logistics: collect, store, and distribute the product/service to buyers
  4. Marketing and sales: the means/incentives for buyers to buy the product/service
  5. Service: enhancements/maintenance of the value of the product/service

4. Value Chain Analysis cont.

- Four supporting activities that underlie the entire value chain:
  1. Organizational infrastructure
  2. Human resources management
  3. Technology development
  4. Procurement

5. E-Business Value Matrix

- It can be difficult for executives to prioritise projects, therefore a ‘portfolio’ management approach is valuable.
- Tool used by Cisco to ensure they are developing a well-rounded portfolio of IT projects.
- Every IT project is meant to be placed into one of four categories to assess its value to the company (Figure 4-8):
  - New fundamentals: Low in criticality & Low in newness of idea=provide a fundamentally new way of working in overhead areas, not business-critical areas
  - Operational excellence: High in criticality to business-Low in newness of idea=medium risk because they may involve reengineering work processes
  - Rational experimentation: Low in criticality to business-High in newness of idea=test new technologies and ideas
  - Breakthrough strategy: High-High=potentially have a huge impact on the company
6. Linkage Analysis Planning

- Examines the links organizations have with one another with the goal of creating a strategy for utilizing electronic channels
- Methodology includes the following steps:
  1. Define power relationships among the various players and stakeholders:
     - Identify who has the power
     - Determine future threats and opportunities for the company
  2. Map out your extended enterprise (Figure 4-9) to include suppliers, buyers, and strategic partners
     - The enterprise’s success depends on the relationships among everyone involved
     - Some 70% of the final cost of goods and services is in their information content
  3. Plan your electronic channels to deliver the information component of products and services
     - Create, distribute, and present information and knowledge as part of a product or service

7. Scenario Planning

- Scenarios are stories about the way the world might be in the future
- The goal of scenario planning is not to predict the future, but to explore the forces that could cause different futures to take place
- Then decide on actions to take if those forces begin to materialize

7. Scenario Planning cont.

- Four steps in Scenario Planning:
  1. Define a decision problem and time frame to bound the analysis
  2. Identify the major known trends that will affect the decision problem
  3. Identify just a few driving uncertainties
  4. Construct the scenarios

Conclusion

- Based on the successes and failures of past information systems planning efforts, we see two necessary ingredients to a good strategic planning effort:
  1. IS plans must look towards the future
     - Future is not likely to be an extrapolation of the past
     - Successful planning needs to support “peering into the future”—most likely in a sense-and-respond fashion
  2. IS planning must be intrinsic to business planning
Conclusion cont.

• IS plans typically use a combination of planning techniques presented
  – No single technique is best and no single one is the most widely used in business

• Sense-and-respond is the new strategy-making mode
  – Creating an overall strategic envelope and conducting short experiments within that envelope, moving quickly to broaden an experiment that proves successful

Conclusion

“Peering into an unknown future”

PART I Discussion Case

*IT Strategy for Royal Dutch/Shell Group*