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Chapter 1
Software Process

Topics

- The nature of software development
- System planning
- Systems for three management levels
- The software development lifecycle
- Development models and methods
- Problem statements for case studies (separate set of slides)

2. System planning

- Which IS technologies and applications will return the most value to the business?

System planning

- **System planning** can be carried out in a number of different ways:
  - SWOT – Strengths, Weaknesses, Opportunities, Threats
  - VCM – Value Chain Model
  - BPR – Business Process Reengineering
  - Information System Architecture (ISA)
- All system planning approaches have an important common denominator – they are concerned with effectiveness rather than efficiency

SWOT approach

VCM approach

- The **VCM (Value Chain Model)** assesses competitive advantage by analyzing the full chain of activities in an organization – from raw materials to final products sold and shipped to customers
- The question is: which value chain configurations will yield the greatest competitive advantage?
  - The IS development projects can then target those segments, operations, distribution channels, marketing approaches, etc. that give the most competitive advantage
- *Organizational functions* are categorized into:
  - primary activities
    - they create or add value to a final product
  - support activities
    - they are essential but they do not enrich the product

BPR approach

- The **BPR (Business Process Reengineering)** approach to system planning is based on the premise that today's organizations must reinvent themselves and abandon the functional decomposition, hierarchical structures and operational principles that they are now using
  - Most contemporary organizations are structured in vertical units focused on functions, products or regions
  - No one employee or department is responsible for a business process which is defined as '. . . a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer'
  - 'The most visible difference between a process enterprise and a traditional organization is the existence of process owners'
- The main objective of BPR is to radically redesign business processes in an organization (hence, **process redesign**)
  - The major hurdle lies in the need to embed a horizontal process in a traditional vertical management structure
  - BPR initiative requires changing the organization around the development teams as the primary organizational units
    - These teams are responsible for one or more end-to-end business processes

ISA approach

- **ISA (Information Systems Architecture)** is a bottom-up approach that offers a neutral architectural framework for IS solutions that can suit a variety of business strategies
  - it does not include a system planning methodology
  - it offers a framework that leverages most business strategies
- The ISA framework is represented as a table of thirty cells organized into five rows (labeled 1 through 5) and six columns (labeled A through F)
  - *Rows* represent the different perspectives used in the construction of a complex engineering product, such as an information system → five major 'players in the game'
  - *Columns* represent the six different descriptions or architectural models that each of the participants engages with

Review Quiz 1.2

1. What is the main target of system planning – effectiveness or efficiency?
2. In the SWOT analysis, are objectives derived from goals or vice versa?
3. In the VCM approach, is ‘sales and marketing’ a primary or support activity?
4. According to the BPR approach, what is the most visible difference between a process enterprise and a traditional organization?
5. What are the five ‘perspectives’ of the ISA framework?