



BUSINESS INTELLIGENCE

LECTURE 04: BUSINESS INTELLIGENCE VS DECISION SUPPORT SYSTEMS

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DECISIONS AND DECISION MAKING PROCESS

TYPES OF DECISIONS

AUTOMATED DECISIONS MAKING

BUSINESS INTELLIGENCE VS DECISION SUPPORT SYSTEM

EXAMPLES OF MANAGER DECISIONS

- Employ strategic planning
- Use new and innovative business models
- Restructure business processes
- Participate in business alliances
- Improve corporate information systems
- Improve partnership relationships
- Encourage innovation and creativity
- Improve customer service and relationships
- Move to electronic commerce (e-commerce)
- Move to make-to-order production and on-demand manufacturing and services
- Use new IT to improve communication, data access (discovery of information), and collaboration
- Respond quickly to competitors' actions (e.g., in pricing, promotions, new products and services)

DECISION MAKING PROCESS

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- Managers usually make decisions by following a four-step process (a.k.a. the scientific approach)
 1. Define the problem (or opportunity)
 2. Construct a model that describes the real-world problem
 3. Identify possible solutions to the modeled problem and evaluate the solutions
 4. Compare, choose, and recommend a potential solution to the problem

DECISION MAKING PROCESS: DIFFICULT FACTORS

- Technology, information systems, advanced search engines, and globalization result in more and more alternatives from which to choose
- Government regulations and the need for compliance, political instability and terrorism, competition, and changing consumer demands produce more uncertainty, making it more difficult to predict consequences and the future
- Other factors are the need to make rapid decisions, the frequent and unpredictable changes that make trial-and-error learning difficult, and the potential costs of making mistakes

DECISION MAKING:TYPE OF DECISIONS VS TYPE OF CONTROL

Type of Decision	Type of Control		
	Operational Control	Managerial Control	Strategic Planning
Structured	Accounts receivable Accounts payable Order entry 1	Budget analysis Short-term forecasting Personnel reports Make-or-buy 2	Financial management Investment portfolio Warehouse location Distribution systems 3
Semistructured	Production scheduling Inventory control 4	Credit evaluation Budget preparation Plant layout Project scheduling Reward system design Inventory categorization 5	Building a new plant Mergers & acquisitions New product planning Compensation planning Quality assurance HR policies Inventory planning 6
Unstructured	Buying software Approving loans Operating a help desk Selecting a cover for a magazine 7	Negotiating Recruiting an executive Buying hardware Lobbying 8	R & D planning New tech. development Social responsibility planning 9

OPERATIONAL DECISIONS

- Operational managers and other employees make *operational decisions* for the company.
- Operational managers include mid-level, supervisory and lower-level management.
- Operational decisions are the day-to-day decisions that have only a short-term impact on a company.
- Examples:
 - Scheduling employees
 - Training on specific tasks in a company (e.g., sales techniques, computer training, etc.)
 - Purchasing office supplies
 - Assigning work to specific employees

TACTICAL DECISIONS

- Officers and executives make *tactical decisions* for a company.
- Officers and executives include the CEO, COO, CFO and other top-level management in a company.
- Tactical decisions are decisions and plans that concern the more detailed implementation of the directors' general strategy, usually with a medium-term impact on a company.
- Examples:
 - Size and structure of a work force
 - Sales and marketing strategy
 - Signing non-disclosure agreements
 - Work assignments allocated to particular groups and people
 - Large purchases within a previously approved budget

STRATEGIC DECISIONS

- A board of directors, whose members are elected by a company's shareholders, makes *strategic decisions* for a company.
- Strategic decisions are decisions and plans that have long-term or material impact on a company
- Examples:
 - The election of officers and executives
 - Equity grants or transfers (including compensation packages for officers and executives)
 - Annual budgets and audits
 - Shareholder distributions
 - Sale of substantially all a company's assets
 - Dissolution or sale of a company

AUTOMATED DECISION MAKING

- A relatively new approach to supporting decision making
- Applies to highly structures decisions
- Automated decision systems (ADS) (or decision automation systems)
- An ADS is a rule-based system that provides a solution to a repetitive managerial problem in a specific area

AUTOMATED STRUCTURED DECISIONS

- ADS initially appeared in the airline industry called revenue (or yield) management (or revenue optimization) systems
 - Dynamically price tickets based on actual demand
 - Dynamically buy products from suppliers in shortage case
- Today, many service industries use similar pricing models
- ADS are driven by business rules!

AUTOMATED UN-STRUCTURED DECISIONS

- Unstructured problems can be only partially supported by standard computerized quantitative methods
- They often require customized solutions
- They benefit from data and information
- Intuition and judgment may play a role
- Computerized communication and collaboration technologies along with knowledge management is often used

AUTOMATED SEMI-STRUCTURED DECISIONS

- Solving semi-structured problems may involve a combination of standard solution procedures and human judgment
- Information Systems handles the structured parts while DSS deals with the unstructured parts
- With proper data and information, a range of alternative solutions, along with their potential impacts

DECISIONS SUPPORT SYSTEMS VS BUSINESS INTELLIGENCE

- Architectures are very similar because BI evolved from DSS
- DSS directly support specific decision making, while BI provides accurate and timely information, and indirectly support decision making
- BI has an executive and strategy orientation, especially in its dashboard components, while DSS, in contrast, is oriented toward analysts
- BI systems are constructed with commercially available tools and components, while DSS is often built from scratch
- DSS methodologies and even some tools were developed mostly in the academic world, while BI methodologies and tools were developed mostly by software companies
- Many of the tools that BI uses are also considered DSS tools (e.g., data mining and predictive analysis are core tools in both)

DECISIONS SUPPORT SYSTEMS VS BUSINESS INTELLIGENCE

- Although some people equate DSS with BI, these systems are not, at present, the same
 - some people believe that DSS is a part of BI—one of its analytical tools
 - others think that BI is a special case of DSS that deals mostly with reporting, communication, and collaboration (a form of data-oriented DSS)
 - BI is a result of a continuous revolution and, as such, DSS is one of BI's original elements



THE END

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