Strategic Information **MANAGEMENT**

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Lecture 08
Enhancing Decision Making

Decision making in businesses used to be limited to management. Today, lower-level employees are responsible for some of these decisions, as information systems make information available to lower levels of the business. But what do we mean by better decision making? How does decision making take place in businesses and other organizations? Let’s take a closer look.

Learning objectives.
After studying this lecture, you will be able to answer the following questions:

1. What are the different types of decisions and how does the decision-making process work?
2. How do information systems support the activities of managers and management decision making?
3. How do business intelligence and business analytics support decision making?
4. How do different decision-making constituencies in an organization use business intelligence?
5. What is the role of information systems in helping people working in a group make decisions more efficiently?

Indicative content, part 01

1. DECISION MAKING AND INFORMATION SYSTEMS

- Business Value of Improved Decision Making
- Types of Decisions
- The Decision-Making Process
- Managers and Decision Making in the Real World
- High-Velocity Automated Decision Making

Indicative content, part 02

2. BUSINESS INTELLIGENCE IN THE ENTERPRISE

- What Is Business Intelligence?
- The Business Intelligence Environment
- Business Intelligence and Analytics Capabilities
- Management Strategies for Developing BI and BA Capabilities

Indicative content, part 03

3. BUSINESS INTELLIGENCE CONSTITUENCIES

- Decision Support for Operational and Middle Management
- Decision Support for Senior Management: The Balanced Scorecard and Enterprise Performance Management Methods
- Group Decision-Support Systems (GDSS)

Lecture	Lesson	Teaching Contents Chapter/Topic/	Task/Work
No.08	Topic title and General Information	**Enhancing Decision Making** Expected learning outcomes. After reading this lecture, you will be able to answer the questions: 1. What are the different types of decisions and how does the decision-making process work? 2. How do information systems support the activities of managers and management decision making? 3. How do business intelligence and business analytics support decision making? 4. How do different decision-making constituencies in an organization use business intelligence? 5. What is the role of information systems in helping people working in a group make decisions more efficiently?	**Discussion Questions during the class** 1. As a manager or user of information systems, what would you need to know to participate in the design and use of a DSS or an ESS? Why? 2. If businesses used DSS, GDSS, and ESS more widely, would managers and employees make better decisions? Why or why not? 3. How much can business intelligence and business analytics help companies refine their business strategy? Explain your answer. **Task. Please, select one of the given questions and write your answer.** 1. What are the different types of decisions and how does the decision-making process work? • List and describe the different levels of decision making and decision-making constituencies in organizations. Explain how their decision-making requirements differ. • Distinguish between an unstructured, semistructured, and structured decision. • List and describe the stages in decision making. 2. How do information systems support the activities of managers and management decision making? • Compare the descriptions of managerial behavior in the classical and behavioral models. • Identify the specific managerial roles that can be supported by information systems. 3. How do business intelligence and business analytics support decision making? • Define and describe business intelligence and business analytics. • List and describe the elements of a business intelligence environment. • List and describe the analytic functionalities provided by BI systems. • Compare two different management strategies for developing BI and BA capabilities. 4. How do different decision-making constituencies in an organization use business intelligence? • List each of the major decision-making constituencies in an organization and describe the types of decisions each makes. • Describe how MIS, DSS, or ESS provide decision support for each of these groups. • Define and describe the balanced scorecard method and business performance management. 5. What is the role of information systems in helping people working in a group make decisions more efficiently? • Define a group decision-support system (GDSS) and explain how it differs from a DSS. • Explain how a GDSS works and how it provides value for a business.
	1	DECISION MAKING AND INFORMATION SYSTEMS • Business Value of Improved Decision Making • Types of Decisions • The Decision-Making Process • Managers and Decision Making in the Real World • High-Velocity Automated Decision Making	
	2	BUSINESS INTELLIGENCE IN THE ENTERPRISE • What Is Business Intelligence? • The Business Intelligence Environment • Business Intelligence and Analytics Capabilities • Management Strategies for Developing BI and BA Capabilities	
	3	BUSINESS INTELLIGENCE CONSTITUENCIES • Decision Support for Operational and Middle Management • Decision Support for Senior Management: The Balanced Scorecard and Enterprise Performance Management Methods • Group Decision-Support Systems (GDSS)	

Part 1

1. DECISION MAKING AND INFORMATION SYSTEMS

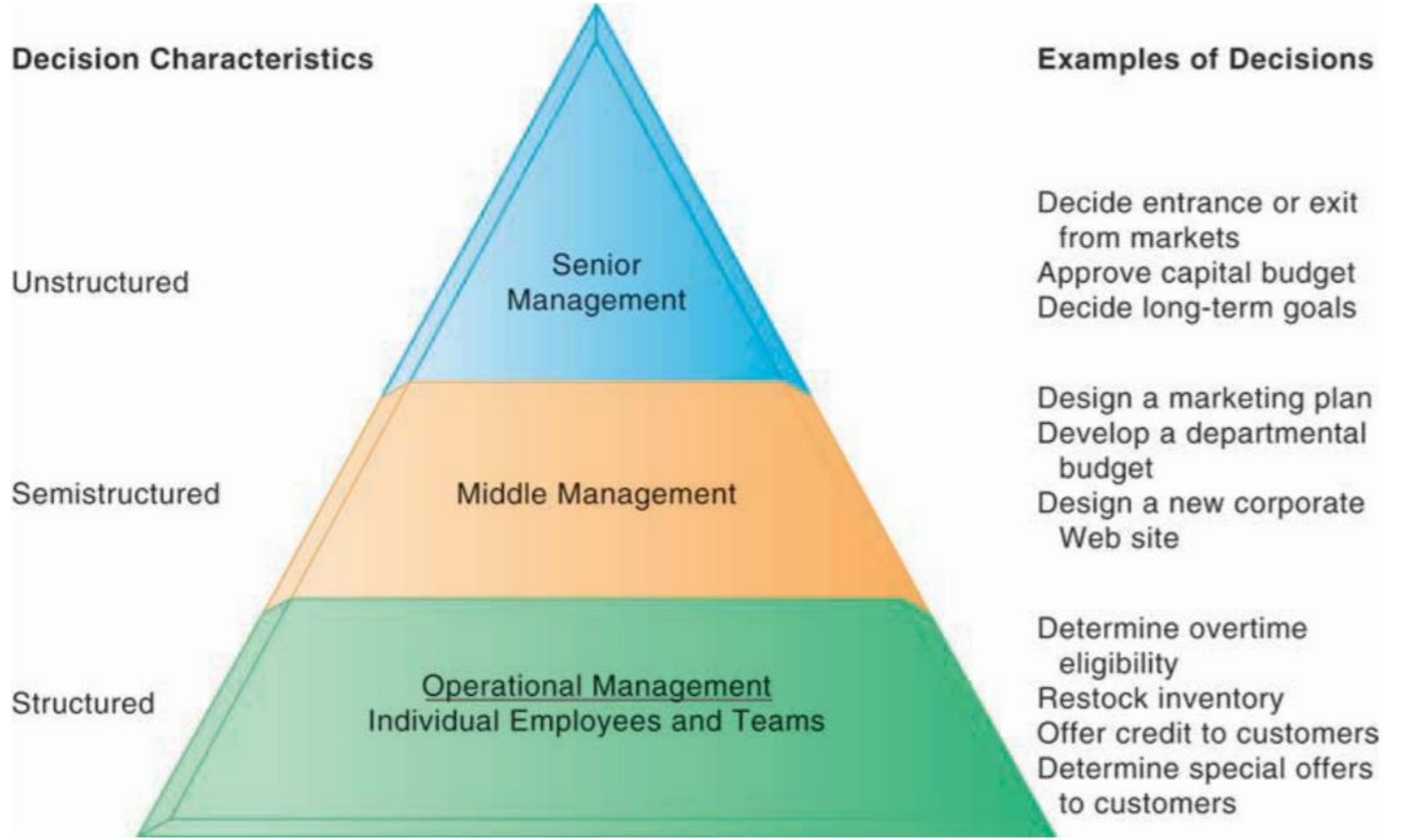
What do we mean by better decision making? How does decision making take place in businesses and other organizations?

BUSINESS VALUE OF IMPROVED

TABLE 12.1 BUSINESS VALUE OF ENHANCED DECISION MAKING

EXAMPLE DECISION	DECISION MAKER	NUMBER OF ANNUAL DECISIONS	ESTIMATED VALUE TO FIRM OF A SINGLE IMPROVED DECISION	ANNUAL VALUE
Allocate support to most valuable customers	Accounts manager	12	$100,000	$1,200,000
Predict call center daily demand	Call center management	4	150,000	600,000
Decide parts inventory levels daily	Inventory manager	365	5,000	1,825,000
Identify competitive bids from major suppliers	Senior management	1	2,000,000	2,000,000
Schedule production to fill orders	Manufacturing manager	150	10,000	1,500,000
Allocate labor to complete a job	Production floor manager	100	4,000	400,000

FIGURE 12.1 INFORMATION REQUIREMENTS OF KEY DECISION-MAKING GROUPS IN A FIRM



TYPES OF DECISIONS

- Unstructured decisions
- Structured decisions
- Semistructured

TYPES OF DECISIONS, part 3

Senior executives face many unstructured decision situations, such as establishing the firm's 5- or 10-year goals or deciding new markets to enter. Answering the question "Should we enter a new market?" would require access to news, government reports, and industry views as well as high-level summaries of firm performance. However, the answer would also require senior managers to use their own best judgment and poll other managers for their opinions.

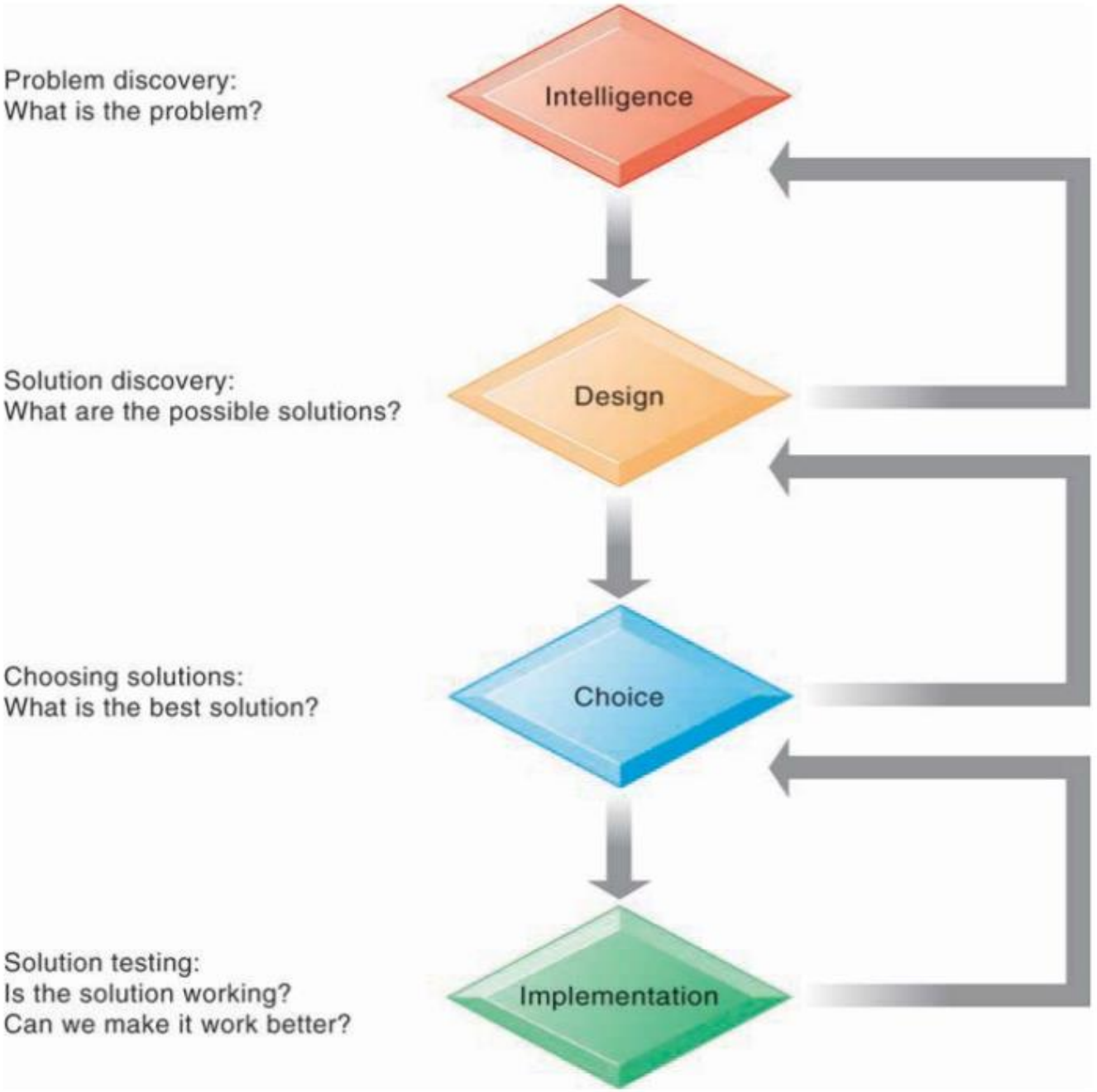
TYPES OF DECISIONS, part 4

Operational management and rank-and-file employees tend to make more structured decisions. For example, a supervisor on an assembly line has to decide whether an hourly paid worker is entitled to overtime pay. If the employee worked more than eight hours on a particular day, the supervisor would routinely grant overtime pay for any time beyond eight hours that was clocked on that day.

THE DECISION-MAKING PROCESS

Making a decision is a multistep process. Simon (1960) described four different stages in decision making: intelligence, design, choice, and implementation (see Figure 2).

FIGURE 12.2 STAGES IN DECISION MAKING



MANAGERS AND DECISION MAKING IN THE REAL WORLD

The premise of this course and this lecture is that systems to support decision making produce better decision making by managers and employees, above average returns on investment for the firm, and ultimately higher profitability.

Managerial Roles

Managers play key roles in organizations. Their responsibilities range from making decisions, to writing reports, to attending meetings, to arranging birthday parties. We are able to better understand managerial functions and roles by examining classical and contemporary models of managerial behavior.

Five classical functions of managers

The classical model of management, which describes what managers do, was largely unquestioned for the more than 70 years since the 1920s. Henri Fayol and other early writers first described the five classical functions of managers as planning, organizing, coordinating, deciding, and controlling. This description of management activities dominated management thought for a long time, and it is still popular today.

The classical model

- The classical model describes formal managerial functions but does not address exactly what managers do when they plan, decide things, and control the work of others.
- For this, we must turn to the work of contemporary behavioral scientists who have studied managers in daily action. Behavioral models state that the actual behavior of managers appears to be less systematic, more informal, less reflective, more reactive, and less well organized than the classical model would have us believe.

Behavioral model

First, managers perform a great deal of work at an unrelenting pace—studies have found that managers engage in more than 600 different activities each day, with no break in their pace.

Second, managerial activities are fragmented; most activities last for less than nine minutes, and only 10 percent of the activities exceed one hour in duration.

Third, managers prefer current, specific, and ad hoc information (printed information often will be too old).

Fourth, they prefer oral forms of communication to written forms because oral media provide greater flexibility, require less effort, and bring a faster response.

Fifth, managers give high priority to maintaining a diverse and complex web of contacts that act as an informal information systems

Henry Mintzberg classification

- Analyzing managers' day-to-day behavior, Henry Mintzberg found that it could be classified into 10 managerial roles.
- Managerial roles are expectations of the activities that managers should perform in an organization. Mintzberg found that these managerial roles fell into three categories: interpersonal, informational, and decisional.

Interpersonal Roles

- Managers act as representatives of their companies to the outside world and perform symbolic duties, such as giving out employee awards, in their interpersonal role.
- Managers act as leaders, attempting to motivate, and support subordinates.
- Managers also act as liaisons between various organizational levels; within each of these levels, they serve as liaisons among the members of the management team.
- Managers provide time and favors, which they expect to be returned.

Informational Roles

Informational Roles. In their informational role, managers act as the nerve centers of their organizations, receiving the most concrete, up-to-date information and redistributing it to those who need to be aware of it. Managers are therefore information disseminators and spokespersons for their organizations.

Decisional Roles

Decisional Roles. Managers make decisions. In their decisional role, they act as entrepreneurs by initiating new kinds of activities; they handle disturbances arising in the organization; they allocate resources to staff members who need them; and they negotiate conflicts and mediate between conflicting groups.

TABLE 12.2 MANAGERIAL ROLES AND SUPPORTING INFORMATION SYSTEMS

ROLE	BEHAVIOR	SUPPORT SYSTEMS
Interpersonal Roles		
Figurehead		Telepresence systems
Leader	Interpersonal	Telepresence, social networks, Twitter
Liaison		Smartphones, social networks
Informational Roles		
Nerve center		Management information systems, executive support system
Disseminator	Information	E-mail, social networks
Spokesperson	processing	Webinars, telepresence
Decisional Roles		
Entrepreneur	Decision	None exist
Disturbance handler	making	None exist
Resource allocator		Business intelligence, decision-support system
Negotiator		None exist

Sources: Kenneth C. Laudon and Jane P. Laudon; and Mintzberg, 1971.

Real-World Decision Making

- We now see that information systems are not helpful for all managerial roles. And in those managerial roles where information systems might improve decisions, investments in information technology do not always produce positive results.
- There are three main reasons: information quality, management filters, and organizational culture

Information Quality

TABLE 12.3 INFORMATION QUALITY DIMENSIONS

QUALITY DIMENSION	DESCRIPTION
Accuracy	Do the data represent reality?
Integrity	Are the structure of data and relationships among the entities and attributes consistent?
Consistency	Are data elements consistently defined?
Completeness	Are all the necessary data present?
Validity	Do data values fall within defined ranges?
Timeliness	Area data available when needed?
Accessibility	Are the data accessible, comprehensible, and usable?

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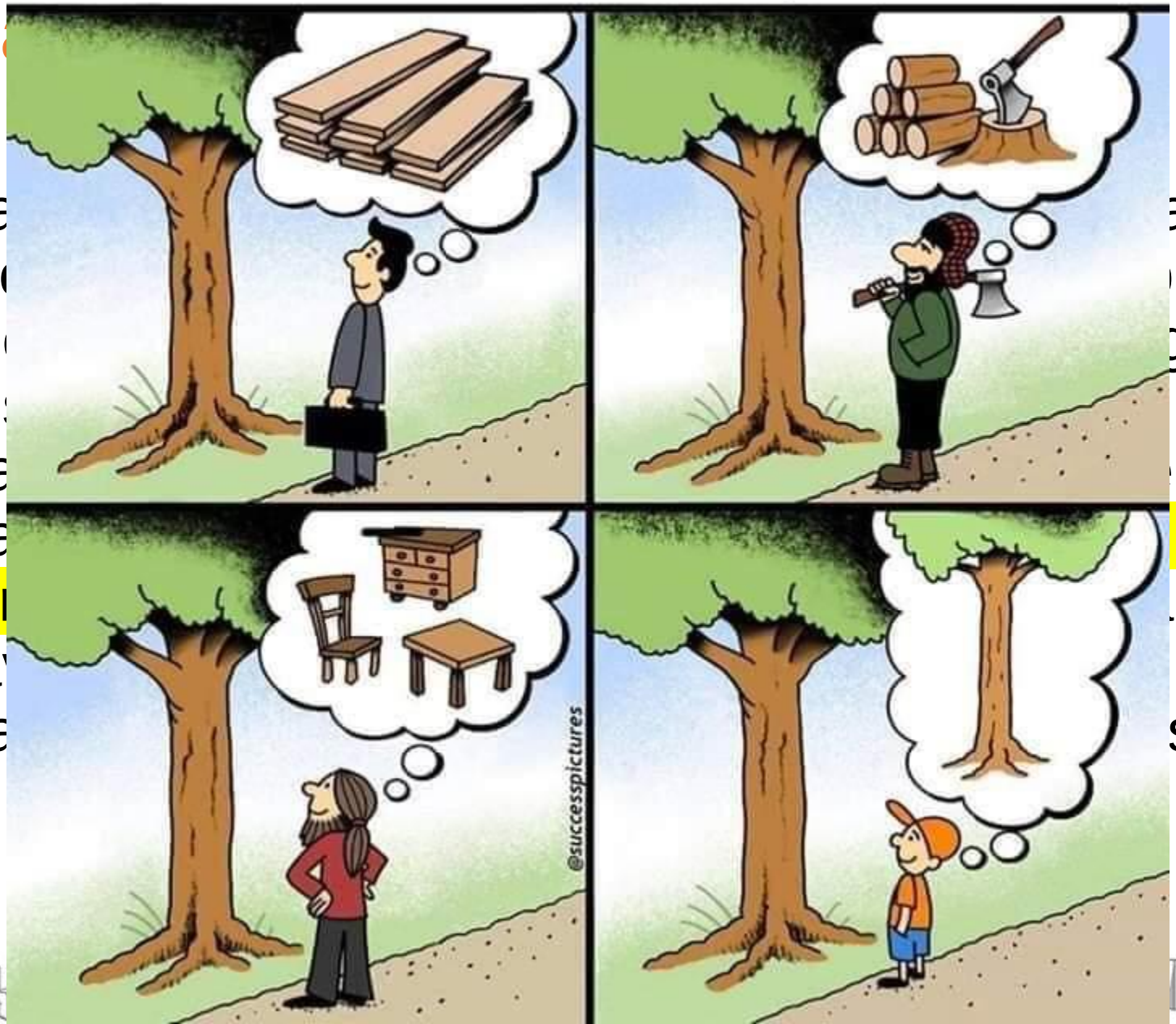

Organizational Inertia and Politics

Organizational Inertia and Politics. Organizations are bureaucracies with limited capabilities and competencies for acting wisely. When environments change and businesses need to adopt new business models to survive, strong forces within organizations resist making decisions calling for major change. Decisions taken by a firm often represent a balancing of the firm’s various interest groups rather than the best solution to the problem.

HIGH-VELOCITY AUTOMATED DECISION MAKING

Today, many decisions made by organizations are not made by managers, or any humans. For instance, when you enter a query into Google's search engine, Google has to decide which URLs to display in about half a second on average (500 milliseconds). Google indexes over 50 billion Web pages, although it does not search the entire index for every query it receives. The same is true of other search engines.

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464

The framework of intelligence-design-choice-implementation work

How does the framework of intelligence-design-choice-implementation work in high-velocity decision environments? Essentially, the intelligence, design, choice, and implementation parts of the decision-making process are captured by the software's algorithms. The humans who wrote the software have already identified the problem, designed a method for finding a solution, defined a range of acceptable solutions, and implemented the solution.

2. BUSINESS INTELLIGENCE IN THE ENTERPRISE

There are different types of systems used for supporting management decision making. At the foundation of all of these decision support systems are a business intelligence and business analytics infrastructure that supplies the data and the analytic tools for supporting decision making.

In this section, we want to answer the following questions:

- What are business intelligence (BI) and business analytics (BA)
- Who makes business intelligence and business analytics hardware and software?
- Who are the users of business intelligence? • What kinds of analytical tools come with a BI/BA suite?
- How do managers use these tools?
- What are some examples of firms who have used these tools?
- What management strategies are used for developing BI/BA capabilities?

WHAT IS BUSINESS INTELLIGENCE?

When we think of humans as intelligent beings we often refer to their ability to take in data from their environment, understand the meaning and significance of the information, and then act appropriately. Can the same be said of business firms?

WHAT IS BUSINESS INTELLIGENCE? Part 2

“Business intelligence (BI)” is a term used by hardware and software vendors and information technology consultants to describe the infrastructure for warehousing, integrating, reporting, and analyzing data that comes from the business environment, including big data. The foundation infrastructure collects, stores, cleans, and makes relevant information available to managers. “

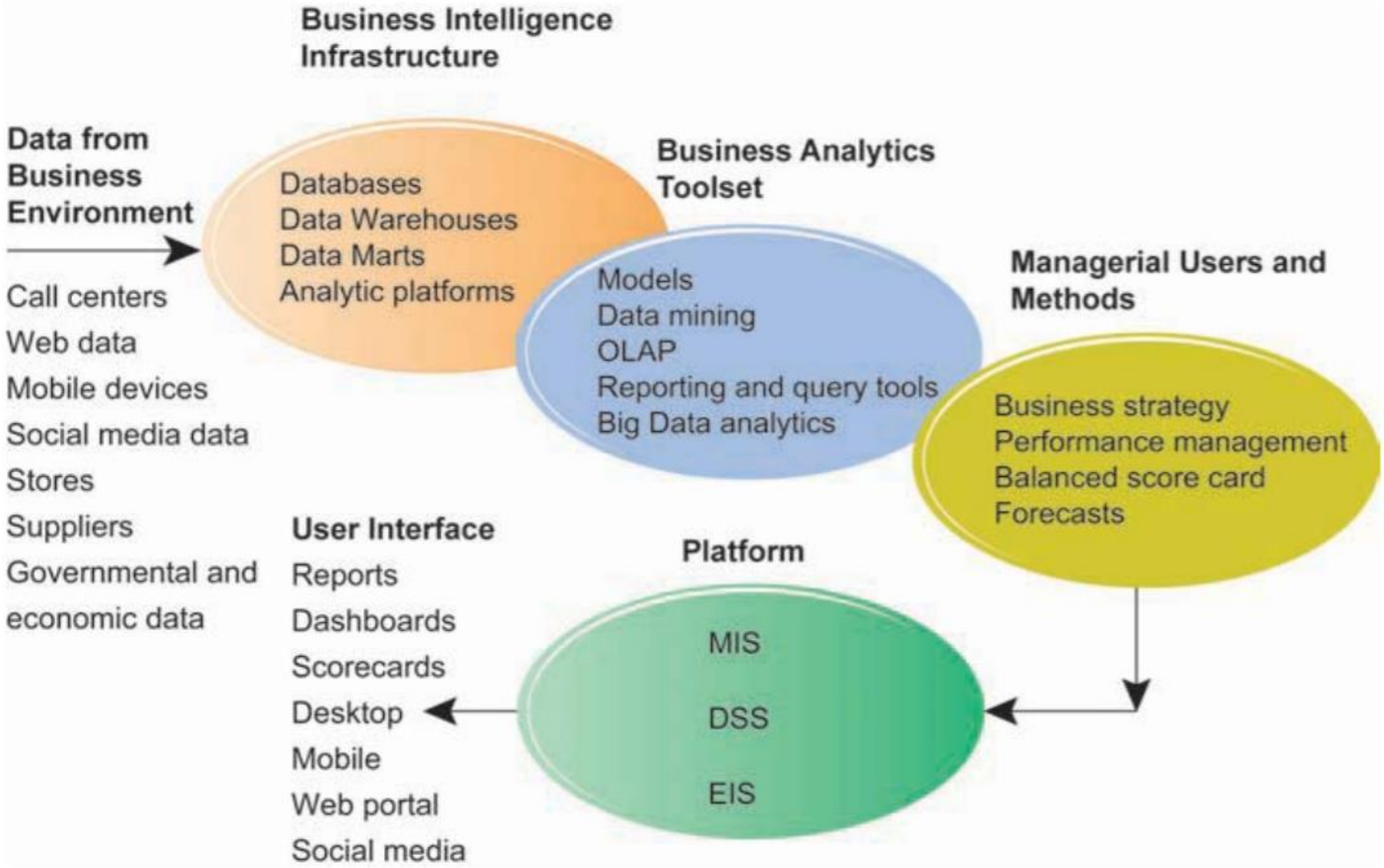
WHAT IS BUSINESS INTELLIGENCE? Part 3

So, stripped to its essentials, business intelligence and analytics are about integrating all the information streams produced by a firm into a single, coherent enterprise-wide set of data, and then, using modeling, statistical analysis tools (like normal distributions, correlation and regression analysis, Chi square analysis, forecasting, and cluster analysis.

Business Intelligence Vendors

It is important to remember that business intelligence and analytics are products defined by technology vendors and consulting firms. They consist of hardware and software suites sold primarily by large system vendors to very large Fortune 500 firms. The largest five providers of these products are Oracle, SAP, IBM, Microsoft, and SAS

FIGURE 12.3 BUSINESS INTELLIGENCE AND ANALYTICS FOR DECISION SUPPORT



Six elements in this business intelligence environment

Data from the business environment: Businesses must deal with both structured and unstructured data from many different sources, including big data. The data need to be integrated and organized so that they can be analyzed and used by human decision makers.

Six elements in this business intelligence environment

Business intelligence infrastructure: The underlying foundation of business intelligence is a powerful database system that captures all the relevant data to operate the business. The data may be stored in transactional databases or combined and integrated into an enterprise-data warehouse or series of interrelated data marts.

Six elements in this business intelligence environment

Business analytics toolset: A set of software tools are used to analyze data and produce reports, respond to questions posed by managers, and track the progress of the business using key indicators of performance.

Six elements in this business intelligence environment

Managerial users and methods: Business intelligence hardware and software are only as intelligent as the human beings who use them. Managers impose order on the analysis of data using a variety of managerial methods that define strategic business goals and specify how progress will be measured. These include business performance management and balanced scorecard approaches focusing on key performance indicators and industry strategic analyses focusing on changes in the general business environment, with special attention to competitors.

Six elements in this business intelligence environment

Delivery platform—MIS, DSS, ESS: The results from business intelligence and analytics are delivered to managers and employees in a variety of ways, depending on what they need to know to perform their jobs. MIS, DSS, and ESS, which we introduced in lecture 02, deliver information and knowledge to different people and levels in the firm—operational employees, middle managers, and senior executives.

Six elements in this business intelligence environment

User interface: Business people are no longer tied to their desks and desktops. They often learn quicker from a visual representation of data than from a dry report with columns and rows of information. Today's business analytics software suites emphasize visual techniques such as dashboards and scorecards.

BUSINESS INTELLIGENCE AND ANALYTICS CAPABILITIES

Business intelligence and analytics promise to deliver correct, nearly real-time information to decision makers, and the analytic tools help them quickly understand the information and take action. There are six analytic functionalities that BI systems deliver to achieve these ends.

Six analytic functionalities of BI

1. Production reports: These are predefined reports based on industryspecific requirements.
2. Parameterized reports: Users enter several parameters in a table to filter data and isolate impacts of parameters. For instance, you might want to enter region and time of day to understand how sales of a product vary by region and time. If you were Starbucks, you might find that customers in the East buy most of their coffee in the morning, whereas in the Northwest customers buy coffee throughout the day.

Six analytic functionalities of BI

3. Dashboards/scorecards: These are visual tools for presenting performance data defined by users.
4. Adv query/search/report creation: These allow users to create their own reports based on queries and searches

Six analytic functionalities of BI

5. Drill down: This is the ability to move from a high-level summary to a more detailed view.
6. Forecasts, scenarios, models: These include the ability to perform linear forecasting, what-if scenario analysis, and analyze data using standard statistical tools.

Who Uses Business Intelligence and Business Analytics?

Over 80 percent of the audience for BI consists of casual users who rely largely on production reports. Senior executives tend to use BI to monitor firm activities using visual interfaces like dashboards and scorecards. Middle managers and analysts are much more likely to be immersed in the data and software, entering queries and slicing and dicing the data along different dimensions.

Production Reports

TABLE 12.5 EXAMPLES OF BUSINESS INTELLIGENCE PREDEFINED PRODUCTION REPORTS

BUSINESS FUNCTIONAL AREA	PRODUCTION REPORTS
Sales	Forecast sales; sales team performance; cross selling; sales cycle times
Service/Call Center	Customer satisfaction; service cost; resolution rates; churn rates
Marketing	Campaign effectiveness; loyalty and attrition; market basket analysis
Procurement and Support	Direct and indirect spending; off-contract purchases; supplier performance
Supply Chain	Backlog; fulfillment status; order cycle time; bill of materials analysis
Financials	General ledger; accounts receivable and payable; cash flow; profitability
Human Resources	Employee productivity; compensation; workforce demographics; retention

Predictive Analytics

An important capability of business intelligence analytics is the ability to model future events and behaviors, such as the probability that a customer will respond to an offer to purchase a product. Predictive analytics use statistical analysis, data mining techniques, historical data, and assumptions about future conditions to predict future trends and behavior patterns. Variables that can be measured to predict future behavior are identified. For example, an insurance company might use variables such as age, gender, and driving record as predictors of driving safety when issuing auto insurance policies. A collection of such predictors is combined into a predictive model for forecasting future probabilities with an acceptable level of reliability.

Predictive analytics

Predictive analytics are being incorporated into numerous business intelligence applications for sales, marketing, finance, fraud detection, and health care. One of the most well-known applications is credit scoring, which is used throughout the financial services industry. When you apply for a new credit card, scoring models process your credit history, loan application, and purchase data to determine your likelihood of making future credit payments on time.

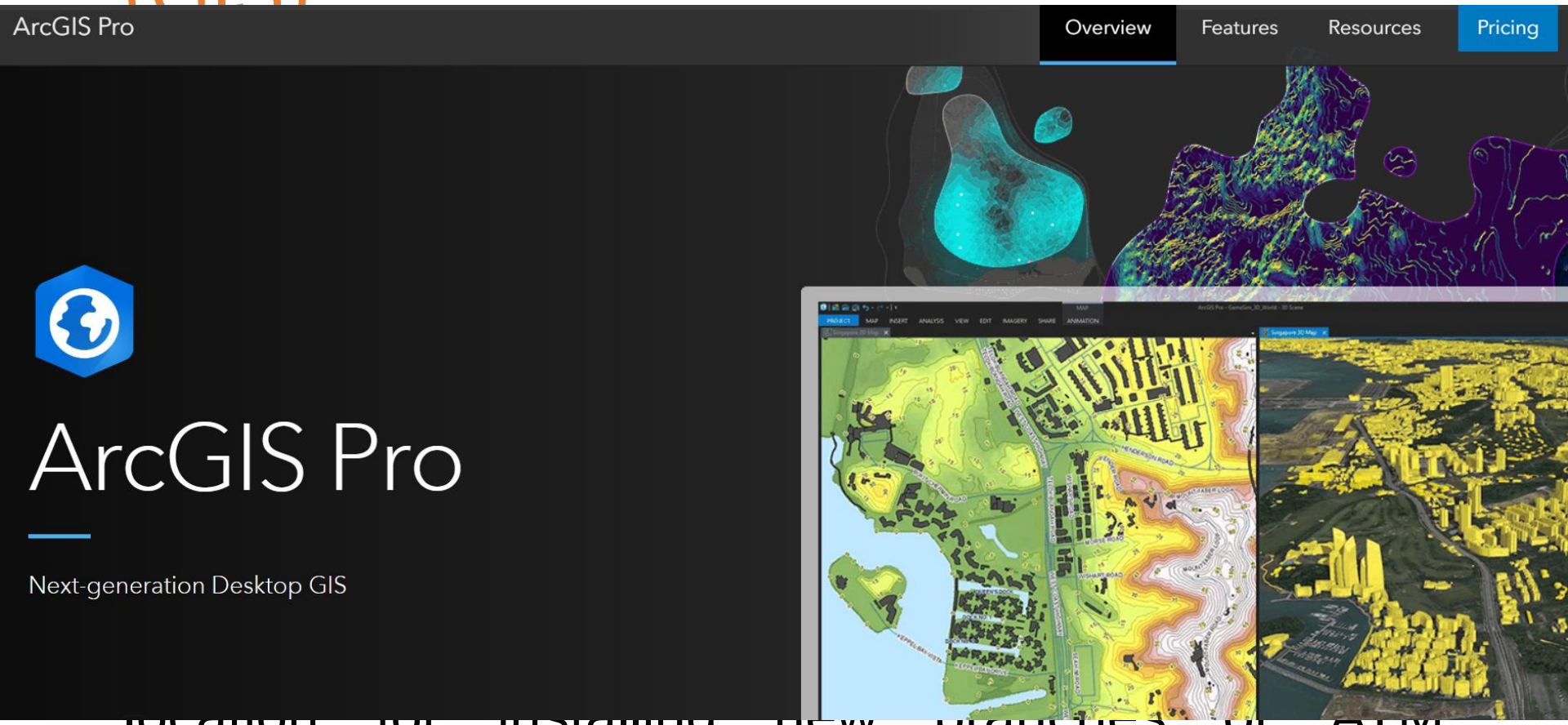
Big Data Analytics

Many online retailers have capabilities for making personalized online product recommendations to their Web site visitors to help stimulate purchases and guide their decisions about what merchandise to stock. However, most of these product recommendations are based on the behaviors of similar groups of customers, such as those with incomes under $50,000 or whose ages are between 18–25. Now some are starting to analyze the tremendous quantities of online and in-store customer data they collect along with social media data to make these recommendations more individualized.

Data Visualization, Visual Analytics, and Geographic Information Systems

By presenting data in visual form, data visualization and visual analytics tools help users see patterns and relationships in large amounts of data that would be difficult to discern if the data were presented as traditional lists of text or numbers.

Geographic information systems (GIS)



location for installing new branches of ATM terminals.

MANAGEMENT STRATEGIES FOR DEVELOPING BI AND BA CAPABILITIES

There are two different strategies for adopting BI and BA capabilities for the organization: one-stop integrated solutions versus multiple best-of-breed vendor solutions.

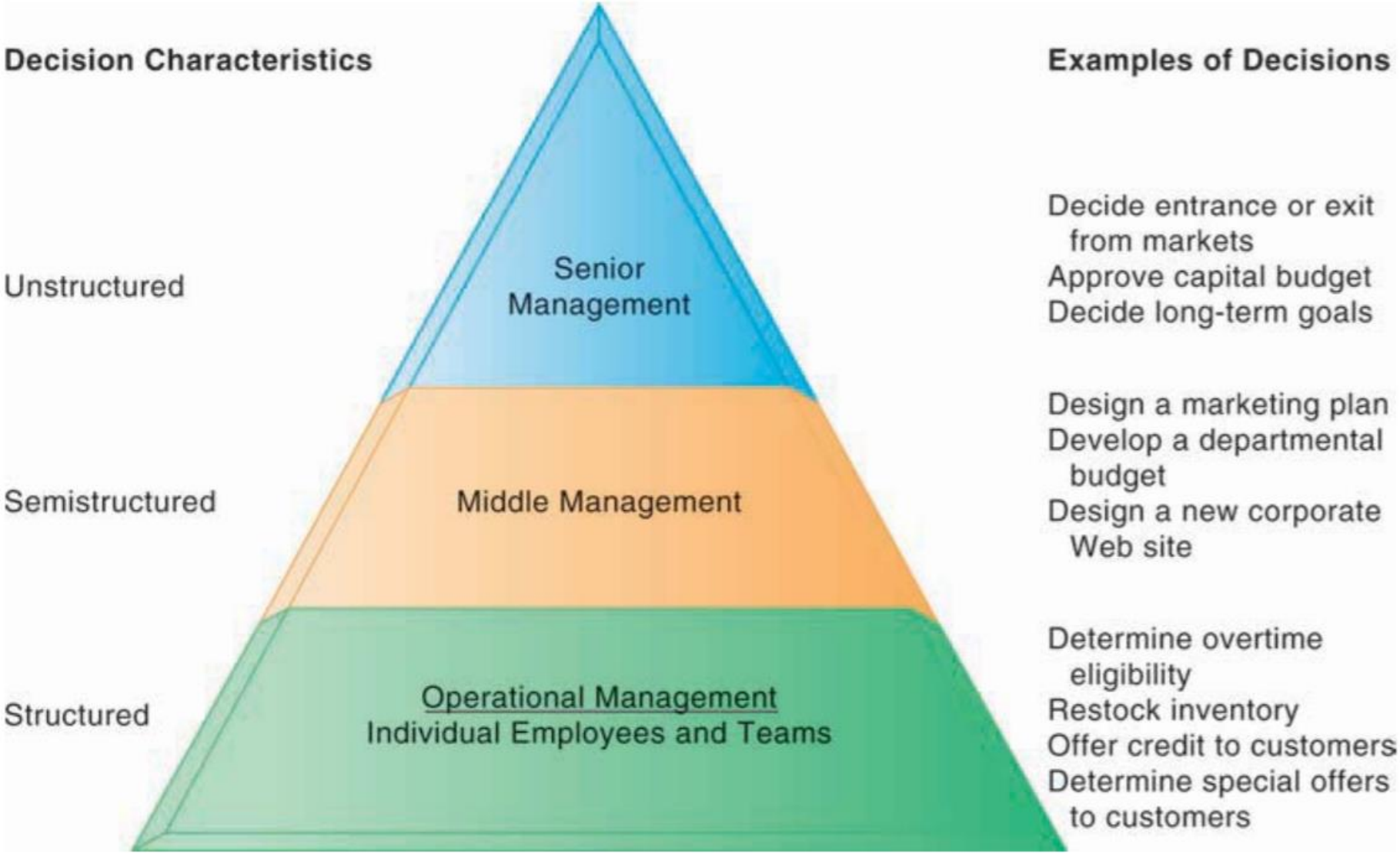
MANAGEMENT STRATEGIES FOR DEVELOPING BI AND BA CAPABILITIES

The first solution carries the risk that a single vendor provides your firm's total hardware and software solution, making your firm dependent on its pricing power. It also offers the advantage of dealing with a single vendor who can deliver on a global scale. The second solution offers greater flexibility and independence, but with the risk of potential difficulties integrating the software to the hardware platform, as well as to other software.

BI

The marketplace is very competitive and given to hyperbole. One BI vendor claims “[Our tools] bring together a portfolio of services, software, hardware and partner technologies to create business intelligence solutions. By connecting intelligence across your company, you gain a competitive advantage for creating new business opportunities.”

FIGURE 12.1 INFORMATION REQUIREMENTS OF KEY DECISION-MAKING GROUPS IN A FIRM



DECISION SUPPORT FOR OPERATIONAL AND MIDDLE MANAGEMENT

Operational and middle management are generally charged with monitoring the performance of key aspects of the business, ranging from the down-time of machines on a factory floor, to the daily or even hourly sales at franchise food stores, to the daily traffic at a company's Web site. Most of the decisions they make are fairly structured. Management information systems (MIS) are typically used by middle managers to support this type of decision making, and their primary output is a set of routine production reports based on data extracted and summarized from the firm's underlying transaction processing systems (TPS).

TABLE 12.6 EXAMPLES OF MIS APPLICATIONS

COMPANY	MIS APPLICATION
California Pizza Kitchen	Inventory Express application "remembers" each restaurant's ordering patterns and compares the amount of ingredients used per menu item to predefined portion measurements established by management. The system identifies restaurants with out-of-line portions and notifies their managers so that corrective actions will be taken.
PharMark	Extranet MIS identifies patients with drug-use patterns that place them at risk for adverse outcomes.
Black & Veatch	Intranet MIS tracks construction costs for various projects across the United States.
Taco Bell	Total Automation of Company Operations (TACO) system provides information on food, labor, and period-to-date costs for each restaurant.

Support for Semistructured Decisions

Some managers are “super users” and keen business analysts who want to create their own reports, and use more sophisticated analytics and models to find patterns in data, to model alternative business scenarios, or to test specific hypotheses. Decision-support systems (DSS) are the BI delivery platform for this category of users, with the ability to support semistructured decision making.

DSS

DSS rely more heavily on modeling than MIS, using mathematical or analytical models to perform what-if or other kinds of analysis. “What-if” analysis, working forward from known or assumed conditions, allows the user to vary certain values to test results to predict outcomes if changes occur in those values. What happens if we raise product prices by 5 percent or increase the advertising budget by $1 million?

In the past, much of this modeling was done with spreadsheets and small stand-alone databases. Today these capabilities are incorporated into large enterprise BI systems where they are able to analyze data from large corporate databases. BI analytics include tools for intensive modeling, some of which we described earlier.

DECISION SUPPORT FOR SENIOR MANAGEMENT: BALANCED SCORECARD AND ENTERPRISE PERFORMANCE MANAGEMENT METHODS

The purpose of executive support systems (ESS) is to help C-level executive managers focus on the really important performance information that affect the overall profitability and success of the firm. There are two parts to developing ESS.

Balanced scorecard method

Currently, the leading methodology for understanding the really important information needed by a firm's executives is called the balanced scorecard method (Kaplan and Norton, 2004; Kaplan and Norton, 1992). The balanced score card is a framework for a firm's strategic plan by focusing on measurable outcomes on four dimensions of firm performance: financial, business process, customer, and learning and growth.

Key performance indicators (KPIs)

Performance on each dimension is measured using key performance indicators (KPIs), which are the measures proposed by senior management for understanding how well the firm is performing along any given dimension. For instance, one key indicator of how well an online retail firm is meeting its customer performance objectives is the average length of time required to deliver a package to a consumer. If your firm is a bank, one KPI of business process performance is the length of time required to perform a basic function like creating a new customer account.

FIGURE 12.7 THE BALANCED SCORECARD FRAMEWORK

Business performance management (BPM)

Another closely related popular management methodology is business performance management (BPM). Originally defined by an industry group in 2004 (led by the same companies that sell enterprise and database systems like Oracle, SAP, and IBM), BPM attempts to systematically translate a firm's strategies (e.g., differentiation, low-cost producer, market share growth, and scope of operation) into operational targets. Once the strategies and targets are identified, a set of KPIs are developed that measure progress towards the targets.

Well-designed ESS

Well-designed ESS help senior executives monitor organizational performance, track activities of competitors, recognize changing market conditions, and i dentify problems and opportunities. Employees lower down in the corporate hierarchy also use these systems to monitor and measure business performance in their areas of responsibility.

GROUP DECISION-SUPPORT SYSTEMS (GDSS)

The DSS we have just described focus primarily on individual decision making. However, so much work is accomplished in groups within firms that a special category of systems called group decision-support systems (GDSS) has been developed to support group and organizational decision making.

GROUP DECISION-SUPPORT SYSTEMS (GDSS)

GDSS-guided meetings take place in conference rooms with special hardware and software tools to facilitate group decision making. The hardware includes computer and networking equipment, overhead projectors, and display screens. Special electronic meeting software collects, documents, ranks, edits, and stores the ideas offered in a decision-making meeting. The more elaborate GDSS use a professional facilitator and support staff. The facilitator selects the software tools and helps organize and run the meeting.

Review Summary

1. What are the different types of decisions and how does the decision-making process work?
2. How do information systems support the activities of managers and management decision making?
3. How do business intelligence and business analytics support decision making?
4. How do different decision-making constituencies in an organization use business intelligence?
5. What is the role of information systems in helping people working in a group make decisions more efficiently?

1. What are the different types of decisions and how does the decision-making process work?

The different levels in an organization (strategic, management, operational) have different decision-making requirements. Decisions can be structured, semistructured, or unstructured, with structured decisions clustering at the operational level of the organization and unstructured decisions at the strategic level. Decision making can be performed by individuals or groups and includes employees as well as operational, middle, and senior managers.

2. How do information systems support the activities of managers and management decision making?

Early classical models of managerial activities stress the functions of planning, organizing, coordinating, deciding, and controlling. Contemporary research looking at the actual behavior of managers has found that managers' real activities are highly fragmented.

3. How do business intelligence and business analytics support decision making?

Business intelligence and analytics promise to deliver correct, nearly real-time information to decision makers, and the analytic tools help them quickly understand the information and take action. A business intelligence environment consists of data from the business environment, the BI infrastructure, a BA toolset, managerial users and methods, a BI delivery platform (MIS, DSS, or ESS), and the user interface.

4. How do different decision-making constituencies in an organization use business intelligence?

Operational and middle management are generally charged with monitoring the performance of their firm. Most of the decisions they make are fairly structured. Management information systems (MIS) producing routine production reports are typically used to support this type of decision making

5. What is the role of information systems in helping people working in a group make decisions more efficiently?

Group decision-support systems (GDSS) help people working together in a group arrive at decisions more efficiently. GDSS feature special conference room facilities where participants contribute their ideas using networked computers and software tools for organizing ideas, gathering information, making and setting priorities, and documenting meeting sessions.

Discussion Questions

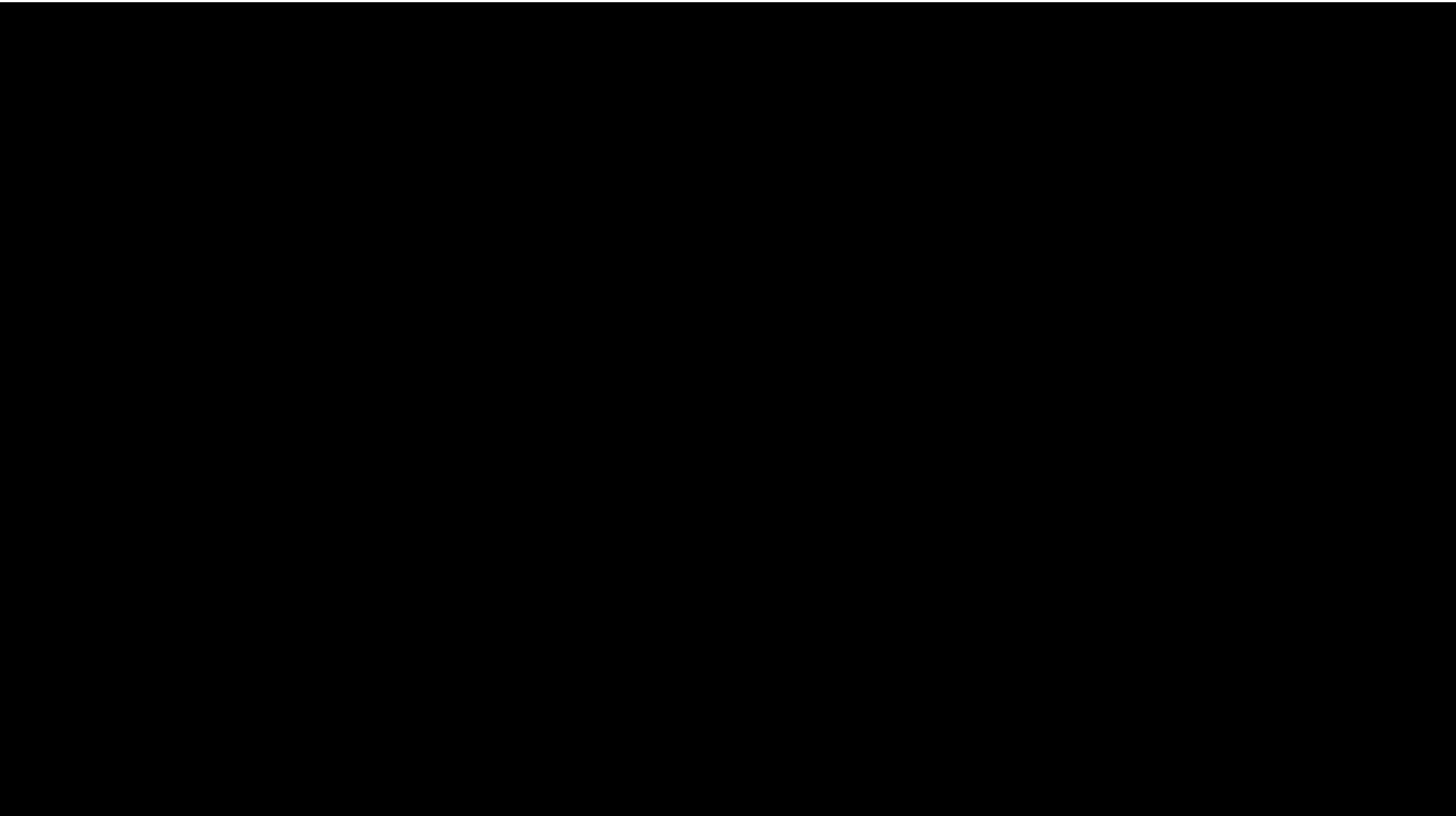
1. As a manager or user of information systems, what would you need to know to participate in the design and use of a DSS or an ESS? Why?
2. If businesses used DSS, GDSS, and ESS more widely, would managers and employees make better decisions? Why or why not?
3. How much can business intelligence and business analytics help companies refine their business strategy? Explain your answer.

Lecture	Lesson	Teaching Contents Chapter/Topic/	Task/Work
No.08	Topic title and General Information	**Enhancing Decision Making** Expected learning outcomes. After reading this lecture, you will be able to answer the questions: 1. What are the different types of decisions and how does the decision-making process work? 2. How do information systems support the activities of managers and management decision making? 3. How do business intelligence and business analytics support decision making? 4. How do different decision-making constituencies in an organization use business intelligence? 5. What is the role of information systems in helping people working in a group make decisions more efficiently?	**Discussion Questions during the class** 1. As a manager or user of information systems, what would you need to know to participate in the design and use of a DSS or an ESS? Why? 2. If businesses used DSS, GDSS, and ESS more widely, would managers and employees make better decisions? Why or why not? 3. How much can business intelligence and business analytics help companies refine their business strategy? Explain your answer. **Task. Please, select one of the given questions and write your answer.** 1. What are the different types of decisions and how does the decision-making process work? • List and describe the different levels of decision making and decision-making constituencies in organizations. Explain how their decision-making requirements differ. • Distinguish between an unstructured, semistructured, and structured decision. • List and describe the stages in decision making. 2. How do information systems support the activities of managers and management decision making? • Compare the descriptions of managerial behavior in the classical and behavioral models. • Identify the specific managerial roles that can be supported by information systems. 3. How do business intelligence and business analytics support decision making? • Define and describe business intelligence and business analytics. • List and describe the elements of a business intelligence environment. • List and describe the analytic functionalities provided by BI systems. • Compare two different management strategies for developing BI and BA capabilities. 4. How do different decision-making constituencies in an organization use business intelligence? • List each of the major decision-making constituencies in an organization and describe the types of decisions each makes. • Describe how MIS, DSS, or ESS provide decision support for each of these groups. • Define and describe the balanced scorecard method and business performance management. 5. What is the role of information systems in helping people working in a group make decisions more efficiently? • Define a group decision-support system (GDSS) and explain how it differs from a DSS. • Explain how a GDSS works and how it provides value for a business.
	1	DECISION MAKING AND INFORMATION SYSTEMS • Business Value of Improved Decision Making • Types of Decisions • The Decision-Making Process • Managers and Decision Making in the Real World • High-Velocity Automated Decision Making	
	2	BUSINESS INTELLIGENCE IN THE ENTERPRISE • What Is Business Intelligence? • The Business Intelligence Environment • Business Intelligence and Analytics Capabilities • Management Strategies for Developing BI and BA Capabilities	
	3	BUSINESS INTELLIGENCE CONSTITUENCIES • Decision Support for Operational and Middle Management • Decision Support for Senior Management: The Balanced Scorecard and Enterprise Performance Management Methods • Group Decision-Support Systems (GDSS)	

A Business Intelligence Analyst in 2020

Become a Business Intelligence Analyst in 2023

https://www.youtube.com/watch?v=26GlYvcYZiI




Thank you