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So Opined Daniel Kahneman and Amos Tversky on Decision Assessment

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Abstract

This paper offers a survey of existing literature relevant to the research topic. It encompasses: Historical Evolution of Decision-Making, Definition of Decision-Making, Key Attributes of Decision-Making, Pros and Cons of Decision-Making, Varieties of Decision-Making, Phases of Decision-Making Process, Approaches and Contexts in Decision-Making, Strategies for Decision-Making, Frameworks for Decision-Making, Innovation in Decision-Making, Obstacles Encountered by Decision Makers, Hidden Pitfalls in Decision-Making, and the Notions of "Unfavorable Decision Dilemma" and "Favorable Decision Dilemma."

Key Words: Decision Dynamics, Decision Techniques and Decision Dynamics

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Prelude

In the midst of the 18th century, Chester Bernard, a retired telecommunications executive and author of "The Roles of Executives," introduced the term "decision-making" from the field of public administration into the business realm. This introduction led to a shift in managerial thinking and prompted a renewed emphasis on action and decisiveness among managers. 'Decision' denotes the conclusion of deliberation and the commencement of action. Bernard and subsequent theorists like

James March, Herbert Simon, and Henry Mintzberg laid the groundwork for the examination of managerial decision-making. Consequently, the study of decision-making has become an interdisciplinary pursuit, incorporating elements of mathematics, sociology, psychology, economics, and political science. Philosophers reflect on the implications of our decisions for our identity and values. Historians dissect the evolutionary path of decision-making within various contexts.

Introduction

The decisions leaders make during pivotal moments. Investigation into risk and organizational behavior stems from a pragmatic desire to aid managers in achieving improved results. Although a sound decision doesn't ensure a favorable outcome, such practicality often proves beneficial. Advancements in managing risk, enhanced comprehension of human behavior, and technological progress supporting cognitive functions have bolstered decision-making across numerous contexts (Albert, 2006). However, history of decision-making strategies does not reflect continuous advancement towards perfect rationality.

Overtime, we've gradually acknowledged limitations—both contextual and psychological—that impact our ability to make optimal choices and better decisions. Some decision authorities suggest that intricate circumstances, time constraints, and inadequate mental processing power constrain decision-makers to a state of "bounded rationality." Others argue that individuals would make economically rational decisions if they could acquire sufficient information. Administrative Behavior theory of decision-making, proposed by Herbert A. Simon (2001), focuses on the examination of decision-making processes within administrative setups. Simon emphasized that decision-making is central to administration and that the lexicon of administrative theory should derive from the logic and psychology of human choice. He aimed to portray administrative organizations in a manner conducive to scientific analysis. Simon rejected the concept of an all-knowing "economic man" capable of maximizing decisions for the greatest benefit. Instead, he introduced the notion of an "administrative man" who optimizes decision efforts. He argued that there is no singular method of management or one optimal decision. Simon believed that decisions are satisfactory rather than maximizing due to subjective human influences in the decision-making process, a concept reinforced by "Bounded Rationality."

Bounded rationality posits that individuals' rationality is limited by information available to them at the time of decision-making, as well as by cognitive constraints. Decision-makers, regardless of intelligence level, must contend with three unavoidable limitations: limited information, restricted cognitive capacity, and time constraints. Mansfield (1999) conducted seminal research on the behavioral perspective of firm theory, elucidating the systemic-anarchic nature of organizational decision-making, known as the Garbage Can Model. His work had a broad scope, focusing on understanding decision processes at various levels, from individuals to society. Henry Mintzberg, in his influential article "The Nature of Managerial Work" (1973), delineated the stark realities of managerial responsibilities. He asserted that job pressures drive managers to shoulder excessive workloads, accommodate interruptions, promptly respond to stimuli, prioritize tangible tasks over abstract ones, make decisions incrementally, and act abruptly. Mintzberg proposed six characteristics of managerial work applicable across all management roles, from supervisors to chief executives.

Definition of Decision-Making

Decision-making is a fundamental aspect of contemporary management, constituting a primary managerial responsibility. The principal task of a manager is to engage in rational decision-making, which encompasses both conscious and subconscious deliberations. Decision-making constitutes a pivotal element of managerial endeavors, influencing both managerial and organizational activities.

Decision-making is the selection based on some criteria from two or more possible alternatives. "

-—George R.Terry A decision can be defined as a course of action consciously chosen from available alternatives for the purpose of desired result

—J.L. Massie A decision is an act of choice, wherein an executive forms a conclusion about what must be done in a given situation. A decision represents a course of behaviour chosen from a number of possible alternatives.

-—D.E. Mc. Farland From these definitions, it is clear that decision-making is concerned with selecting a course of action from among alternatives to achieve a predetermined objective.

A decision can be delineated as "a selected course of action consciously chosen from a pool of alternatives to attain a desired outcome," representing a judicious judgment and a commitment to action. According to James Stoner, decision-making entails the process of identifying and opting for a course of action to resolve a specific issue. As per Trewartha and Newport, decision-making entails selecting a course of action from multiple alternatives to devise a solution for a given problem. It is widely acknowledged that one of management's primary functions is to resolve issues and situations through decision-making. Decision-making permeates all managerial functions, constituting an ongoing process inherent to the management process itself. It involves choosing the most appropriate course of action from various alternatives to achieve an objective or solve a problem. Decision-making is integral to management, necessitating the consideration of alternatives, selection of the optimal option, and the presence of objectives or problems requiring resolution. It aims to deliver solutions based on reliable information and effective communication of the decision. Various definitions of decision-making emphasize its essence as a process of selecting the best alternative from available options to fulfill predetermined objectives. From these definitions, it is evident that decision-making entails choosing a course of action from alternatives to achieve organizational goals.

Key elements derived from these definitions include: 1. Decision-making involves a process of selection, focusing on choosing the most suitable alternative. 2. Decisions are oriented towards accomplishing organizational objectives. 3. It entails a comprehensive evaluation of available alternatives to identify the optimal choice. 4. Decision-making is a cognitive process, requiring thoughtful consideration. 5. It leads to commitment, influenced by the decision's nature, whether short-term or long-term. Decision-making establishes a connection between means and ends, facilitating the attainment of goals through appropriate follow-up actions. The term 'decision' originates from the Latin word 'deciso,' meaning 'a decisive conclusion or action.' Decisions are made to achieve objectives through subsequent actions. Decision-making denotes the process through which decisions, or courses of action, are determined, constituting an integral aspect of the management process. According to Peter Drucker, "All managerial activities are executed through decision-making." Managers must engage in decision-making before taking action or formulating execution plans.

Furthermore, his competence is frequently assessed based on the caliber of decisions he makes. Consequently, management inherently entails a decision-making process, constituting an integral aspect of every managerial duty. This is because action cannot be initiated without reaching a firm decision regarding a business issue or circumstance. This underscores the necessity of decision-making in planning, organizing, directing, controlling, and staffing. For instance, during the planning phase, various alternative plans are devised to address potential scenarios. From these alternatives, the most suitable one (the plan most apt for the prevailing business environment) must be chosen. In this scenario, the planner must make sound decisions, underscoring the centrality of decision-making in the planning function.

Similarly, decisions are imperative in executing other management functions such as organizing, directing, and staffing, highlighting the significance of decision-making throughout the management process. The efficacy of management hinges on the quality of decision-making, justifying the depiction of management as a decision-making process. According to R. C. Davis, "management entails a decision-making process." Decision-making is an intellectual process involving the selection of one course of action from multiple alternatives. Following decision-making, the subsequent management function is planning. Subsequent elements include organizing, directing, coordinating, controlling, and motivating. Decision-making takes precedence over the planning function. As per Peter Drucker, top management bears responsibility for all strategic decisions, encompassing business objectives, capital expenditures, and operational decisions like workforce training. Without such decisions, no actions can be undertaken, leading to idle and unproductive resources. Managerial decisions should strive for maximum correctness.

Characteristics of Decision Making

Decision making involves selection: Decision making entails choosing from among multiple alternative courses of action. It is the process of picking one solution from a range of available options. In addressing any business issue, various alternative solutions exist, requiring managers to evaluate and choose the most suitable one for implementation. It is often stated that "Decision-making fundamentally involves selecting between alternatives." In the decision-making process, multiple alternatives are critically assessed, and the best one is chosen, considering the prevailing business environment. The correctness of the chosen alternative may be determined in the future based on the outcomes of the decision already made.

In essence, decision-making is fundamentally about choosing between available alternatives, which may number two or more. Furthermore, during the decision-making process, information is gathered, alternative solutions are evaluated critically, and the best solution among the available options is identified. Every problem can be addressed through different approaches, each representing an alternative, from which the decision-maker must select the most suitable. This underscores the fundamental nature of decision-making as the selection between alternatives, which may be two or more, with the most appropriate option chosen for actual implementation. The manager must possess the capability to select the optimal alternative, as the benefits of correct decision-making are realized only when the best alternative is chosen for implementation.

Continuous process: Decision-making is an ongoing and dynamic process that permeates all organizational activities. Managers are continually required to make decisions on various policy and administrative matters, making it an enduring activity in business management.

Mental/intellectual activity: Decision-making is both a mental and intellectual process that necessitates knowledge, skills, experience, and maturity on the part of the decision-maker. It is fundamentally a human activity.

Based on reliable information/feedback: Sound decisions are always grounded in reliable information. The quality of decision-making across all organizational levels can be enhanced through the assistance of an effective and efficient management information system (MIS).

Goal-oriented process: Decision-making is aimed at providing solutions to the challenges faced by a business enterprise. It is a goal-directed process that addresses problems encountered by a business unit.

Means and not the end: Decision-making serves as a means for problem-solving or achieving objectives and is not an end in itself.

Relates to specific problem: Decision-making is distinct from problem-solving but originates from a problem itself.

Time-consuming activity: Decision-making is time-consuming, requiring careful consideration of various aspects before arriving at a final decision. Decision-makers must complete several steps, making decision-making a time-intensive endeavor.

Needs effective communication: Decisions must be communicated to all relevant parties for appropriate follow-up actions. Failure to communicate decisions renders them ineffective, preventing subsequent actions from being taken.

Pervasive process: The decision-making process is pervasive, requiring managers at all levels to make decisions within their purview.

Responsible job: Decision-making is a weighty responsibility, as incorrect decisions can prove costly to the organization. Decision-makers should be mature, experienced, knowledgeable, and rational in their approach, as decision-making is not a routine or casual activity but rather a delicate and responsible task.

Advantages of Decision Making

Decision making constitutes the fundamental role of management: Management functions commence only upon strategic decisions being made by top-level management. Devoid of decisions, actions become impracticable, and resources remain idle. Consequently, decision-making stands as the primary function of management.

Decision-making facilitates the entire management process: Decision-making establishes a conducive framework for the initial management activity, namely planning. Planning translates broad decisions concerning business objectives, formulated by top-level management, into concrete plans. Moreover, decision-making is indispensable in executing other management functions such as organizing, staffing, coordinating, and communicating.

Decision-making is a continuous managerial responsibility: Managers across all levels are compelled to make decisions pertaining to their designated functions. Continuous decision-making is imperative for all managers and executives, as follow-up actions cannot be initiated without preceding decisions.

Decision-making is imperative in addressing novel problems and challenges: Regular decision-making is necessitated as new problems, difficulties, and challenges arise within a business enterprise. These occurrences may stem from changes in the external environment, including the introduction of new products, emergence of new competitors, or alterations in government policies. Such environmental changes give rise to fresh problems requiring new decisions.

Types of Decision-making

Decision-making constitutes a pivotal aspect of management, characterized by a structured decision-making process. Various categories of decisions necessitate attention in the day-to-day operations of the firm. Let us explore some of these decision types.

Strategic Decisions and Routine Decisions: Routine decisions pertain to the daily operations of the organization and are inherently routine in nature. These decisions typically do not demand extensive evaluation or analysis and are often delegated by senior managers to their subordinates.

Conversely, strategic decisions are significant determinations concerning the firm's policies or strategic direction for the future. Consequently, strategic decisions necessitate thorough analysis and deliberation, as they impact the routine decisions made on a daily basis.

Programmed Decisions and Non-Programmed Decisions: Programmed decisions revolve around repetitive functions governed by specific standard procedures. These decisions are predominantly addressed by lower-level management and entail tasks such as granting employee leave or procuring spare parts, where standardized protocols are followed.

Non-programmed decisions, on the other hand, emerge from unstructured problems that deviate from routine occurrences. Lacking standardized procedures, non-programmed decisions are typically significant to the organization and are delegated to upper management. For instance, the decision to establish a new branch office constitutes a non-programmed decision.

Policy Decisions and Operating Decisions: Policy decisions encompass tactical determinations concerning the firm's policies and strategic planning. Reserved for top management officials, policy decisions wield long-term ramifications and necessitate thoroughanalysis.

Operating decisions, conversely, are instrumental in executing policy decisions. These decisions facilitate the implementation of plans and policies formulated by senior management and are typically addressed by middle and lower management. For example, announcing a bonus issue constitutes a policy decision, while the subsequent calculation and implementation of the bonus issue represent operating decisions.

Organizational Decisions and Personal Decisions: When an executive makes a determination in an official capacity on behalf of the organization, it constitutes an organizational decision. Such decisions can be delegated to subordinates.

Conversely, if the executive makes a determination in a personal capacity unrelated to the organization, it is deemed a personal decision. Obviously, these decisions cannot be delegated.

Individual Decisions and Group Decisions: Regarding decision types, let's consider individual and group decisions. Any decision made by an individual in an official capacity is categorized as an individual decision. Organizations with a smaller size and autocratic management style rely on such decisions.

Group decisions, on the other hand, are made by a collective of the firm's employees and management. For instance, decisions made by the board of directors constitute a group decision.

Opportunity and Problem Solving Decisions: Often, managers make decisions to seize opportunities, known as opportunity decisions, for the growth and development of the organization.

Managers also make decisions to address problems or emergencies within the organization, known as problem-solving decisions. In such instances, the manager must demonstrate proficiency in problem-solving.

Major and Minor Decisions

Major decisions are made by top management and pertain to significant matters, such as the purchase of new land for a branch of the organization.

Minor decisions, conversely, are less significant and can be delegated tolower levels of management, such as purchasing office stationary, which can be decided by the office superintendent.

Research-Based and Interactive Decisions

Research-based decisions require extensive evidence gathering before action can be taken. This entails researching alternatives and assessing their consequences. During crises, managers must conduct thorough research to navigate the situation effectively.

While managers often make decisions autonomously, there are occasions when they must consult and interact with other team members, interact with other team members, leading to interactive decisions. Interactive decisions are typically quicker, easier, and potentially more accurate.

Steps of Decision Making Process

Decision-making is a fundamental management skill that varies from individual to individual. Making decisions based on careful analysis of various circumstances, especially in a timely manner, is crucial. Therefore, decisions should not be delayed or made hastily, especially when facing unfavorable odds.

Step 1: Identification of the purpose of the decision

In this phase, the problem is thoroughly analyzed, and pertinent questions are posed to ascertain the purpose of the decision.

Step 2: Information gathering

A problem within an organization involves multiple stakeholders and factors. To address the problem effectively, information related to these factors and stakeholders must be gathered extensively. Tools such as 'Check Sheets' can be utilized for information gathering.

Step 3: Principles for evaluating the alternatives

During this phase, establish the fundamental criteria for assessing the alternatives. When defining these criteria, consider organizational objectives and the corporate culture. For instance, profitability is a primary concern in decision-making processes, with companies typically avoiding decisions that diminish profits unless under exceptional circumstances. Similarly, core principles should be identified concerning the specific problem at hand.

Step 4: Brainstorm and analyze the various options

Utilize brainstorming to generate a comprehensive list of ideas. Before brainstorming, it's crucial to understand the root causes of the problem and prioritize them. Tools such as Cause-and-Effect diagrams and Pareto Charts can aid in this process. Cause-and-Effect diagrams help identify all potential causes of the problem, while Pareto charts assist in prioritizing and identifying causes with the greatest impact. Subsequently, generate all possible solutions (alternatives) for the problem.

Step 5: Assessment of alternatives

Utilize your judgment principles and decision-making criteria to evaluate each alternative. Experience and the effectiveness of judgment principles play significant roles in this step. Compare each alternative based on their strengths and weaknesses.

Step 6: Selection of the optimal alternative

Having traversed through Steps 1 to 5, this step becomes straightforward. Additionally, the selection of the best alternative is an informed decision since a methodology has been followed to derive and select the optimal alternative.

Step 7: Implementation of the decision

Translate your decision into a plan or a series of actions. Execute your plan either independently or with the assistance of subordinates.

Step 8: Evaluation of the results

Assess the outcome of your decision. Identify any lessons learned and areas for improvement in future decision-making. This practice can significantly enhance decision-making skills.

Approaches and Environment of Decision-Making

Decision-making can occur in various ways. Four primary approaches to decision-making are outlined below:

Centralized and Decentralized Approach: In the centralized approach, top-level managers predominantly make decisions, albeit some responsibility may be delegated to middle-level managers. Conversely, in the decentralized approach, decision-making authority is delegated to lower-level managers. Decentralized approach is typically used for programmed decisions, while centralized approach is favored for non-programmed decisions.

Group and Individual Approach: Managers may engage in decision-making with their employees or subordinates in the group approach. Alternatively, decisions may be made by the manager alone in the individual approach. The individual approach is suitable when there is an urgent need for decision-making or when resources are limited. The cost of individual decision-making is lower than that of group decision-making. However, group decision-making is generally preferred over individual decision-making as it is based on extensive information and ensures better quality and accuracy of decisions. Additionally, it fosters employee morale, job satisfaction, coordination, and reduces labor turnover. Nevertheless, limitation of group decision-making lies in individuals conforming to decisions despite their disagreement, thereby avoiding conflict and not expressing their reservations.

Inclusive and Authoritarian Approach: In the inclusive approach, decisions are made by soliciting input from those impacted by the decisions. Unlike group decision-making, there is no formal assembly of superiors and subordinates; instead, the decision-maker seeks information and suggestions from employees while retaining the authority to make decisions. This approach fosters increased employee participation in achieving decision objectives. Conversely, in the authoritarian approach, managers do not seek input from employees as the decisions do not directlyaffect them. Managers gather information independently, make decisions, and communicate them to organizational members.

Democratic and Unanimous Approach: In the democratic approach, decisions are based on majority voting. Conversely, in the unanimous approach, participants discuss the issue and reach a general agreement. While similar to group decision-making, where multiple individuals are involved in the process, in unanimous decision-making, all members agree to the decision. Unlike group decision-making, where individuals may conform due to social or psychological pressures, unanimous decision-making reflects the agreement of all group members.

Decision-Making Environment:

The decision-making environment encompasses the known and unknown environmental factors influencing decision-making. Decisions are made under varying degrees of certainty, ranging from complete certainty to complete or partial uncertainty. The decision-making context encapsulates three scenarios:

Certainty: In a certain environment, decision-makers possess complete and reliable information about the future. Information is accurate, dependable, and not excessively costly. Managers can predict the outcomes of each alternative and consequently select the optimal course of action. However, such situations rarely occur in reality. Managers base decisions on available information, disregarding uncertainties, which they classify as certainties.

Risk: This scenario entails incomplete information about the environment, which is alsonot entirely reliable. While alternative courses of action can be formulated, the outcomes of decisions remain uncertain. Expected results are probabilistic rather than deterministic, with past events serving as a basis for future outcomes. For instance, the decision to introduce a new product to the market carries the risk of competition, which managers anticipate but cannot precisely quantify. Most decisions are made under conditions of risk.

Uncertainty: In situations of uncertainty, no information is available about the future, and whatever information exists is unreliable. Decision alternatives are entirely unpredictable, and outcomes cannot be foreseen. Decisions rely on managers' intuition and judgment. Uncertain elements in the environment include economic, political, technological, and natural changes, which are unpredictable and cannot be factored into decision-making processes.

Techniques of Decision-Making

A variety of methods are accessible to enhance the decision-making process. These can be broadly categorized as:

- Conventional Approaches
- Contemporary Approaches

Conventional Approaches:

There are three widely accepted traditional methods for making routine decisions, which include:

(a) Routines: Routines represent the customary ways in which issues are resolved based on established ideas. Managers don't employ scientific approaches to tackle problems. Through repeatedly solving the same problem in a set manner, managers develop a pattern of addressing it. This method doesn't necessitate extensive thought or innovation.

(b) Standard Procedures: Standard procedures are organizational customs. They direct decision-makers in resolving organizational issues in a predetermined manner. While more formal than routines, they remain adaptable and subject to change. For instance, cases of unauthorized absences are not left to managerial discretion. Instead, standardized procedures dictate actions against such occurrences.

(c) Organizational Framework: It constitutes a clearly defined hierarchy of authority-responsibility connections. Each individual comprehends their role in the organization, their decision-making authority, the extent to which it can be delegated to subordinates, communication channels, and reporting lines. This aids in addressing routine issues.

Contemporary Approaches:

Modern techniques utilize mathematical models to address business challenges. They apply systematic and logical decision-making processes to arrive at the best solution. Utilizing quantifiable variables, they establish relationships via mathematical equations and operations research techniques. Leveraging computers for data processing and storage, these methods tackle complex management issues. These techniques can be categorized as follows:

Modern Techniques for Routine Decisions:

(a) Break-even Analysis: This aids managers in determining the output level at which total costs (variable and fixed) equate to total revenue. This break-even point signifies zero total profit. It assists in analyzing the economic viability of a proposal.

(b) Inventory Optimization Models: These models help in managing inventory efficiently by determining the optimal balance between carrying costs and ordering costs.

(c) Linear Programming: It's a method for optimizing resource allocation to maximize output or minimize costs under resource constraints.

(d) Simulation: This involves creating artificial models of real-life situations to predict outcomes and assess the impact of different variables.

(e) Probability Theory: Utilized to assess the likelihood of certain outcomes based on past experience and quantifiable data.

(f) Decision Trees: Diagrammatic representations of future events under different decision scenarios, aiding in selecting the most favorable course of action.

(g) Queuing Theory: Describes queuing situations and aims to minimize wait times and optimize resource utilization.

(h) Game Theory: Assists in strategic decision-making by simulating competitive scenarios and anticipating competitors' actions.

(i) Network Analysis: Techniques for planning and controlling project timelines and resource allocation.

Modern Techniques for Non-routine Decisions:

(a) Creative Problem-Solving Techniques: Methods to harness creativity in generating novel solutions to business challenges.

(b) Participative Decision-Making: Involving employees in the decision-making process to enhance decision quality, commitment, and morale.

(c) Heuristic Techniques: Trial-and-error approaches to decision-making, aiding in navigating complex and uncertain situations.

These approaches are facilitated by computer-based tools, including:

Decision Support Systems: Assisting decision-makingby providing access to relevant data and facilitating analysis.

Expert Systems: Leveraging expert knowledge to solve specific problems in designated domains.

Decision-Making Models

Models depict how decision-makers behave and perceive their environment. Two models guide managerial decision-making behavior:

A. Rational/Normative Model: Economic Man

B. Non-Rational/Administrative Model

Rational/Normative Model:

This model assumes decision-makers act as "economic men" according to classical management theory. Driven by economic incentives, they aim to maximize profits, often disregarding behavioral or social factors. Decision-makers under this model are presumed to possess perfect information processing abilities. They gather comprehensive and reliable data, generate all possible alternatives, evaluate each alternative's outcome, prioritize them, and select the best option. This model is based on several assumptions:

Assumptions are:

1. Leaders possess clearly defined objectives. They understand precisely what they aim to accomplish. They have distinct aims and grasp the methods to achieve them.

2. They can gather comprehensive and dependable data from the surroundings to meet the objectives.

3. They are innovative, methodical, and logical in their cognition. They can recognize all options and their consequences related to the issue.

4. They can assess all the options and arrange them in a hierarchy of importance.

5. They are unrestricted by time, expenses, and information in decision-making.

6. They can select the optimum option that will yield maximum benefits at minimal expense.

Limitations:

Actual decision-making deviates from the rational models. These models are normative and directive. They merely depict what is ideal, what decision-makers ought to do to make the finest decisions, and outline the standards they should adhere to in decision-makers ought to do to make the finest decisions, and outline the standards they should adhere to in decision-making. They do not delineate how decision-makers truly behave in varied decision-making circumstances (This is expounded in the non-rational models). They solely elucidate what is the optimal. However, the optimum is not attained in real-world situations due to the subsequent constraints that managers encounter while making decisions:

1. They confront numerous, conflicting objectives instead of a clearly defined goal they aim to accomplish.

2. They are limited by their capacity to amass exhaustive information about environmental factors. Information is forward-looking, and given the uncertainty of the future, complete information cannot be gathered. They cannot acquire information about all the options. Even for a singular option, they cannot gather comprehensive information.

3. They are bound by time and cost considerations to assimilate the information. They are restricted in their quest for options that influence decision-making circumstances. Their decisions are based on whatever information they can gather, not on complete information. Most non-routine decisions are made under conditions of incomplete information.

4. They are constrained by their capacity to analyze every factor influencing the decision process. They possess limited knowledge to evaluate all the options. They cannot anticipate the outcomes of various options as they will only be known in the future.

5. They may base decisions on subjective and personal predispositions. They consider only those facts they deem relevant for decision-making.

6. Ongoing research, innovations, and technological advancements can render the finest decisions suboptimal. Hence, managers are constrained by technological factors.

7. Evolving economic and social factors (economic and political policies, socio-cultural values, ethics, traditions, customs, etc.) impede managers' ability to make rational decisions.

8. Every manager possesses a value system that influences their decision-making behavior. Personal preferences affect decision quality. Perceptions about various options influence the choice of options and the situations in which they are applied.

9. Individuals view organizational issues from their personal perspectives. Marketing, human resource, and finance managers do not perceive organizational issues similarly. They approach the same problem from different angles and generate varying options.

10. Most organizational decisions reflect multiple viewpoints of managers at different levels. Individuals within the group have conflicting objectives. Choices are made through negotiation, resolving clashes among various interest groups. The final decision does not necessarily reflect the viewpoints of all managers, and thus, not all options are considered in decision-making.

Non-rational/Administrative Models:

Non-rational models are descriptive rather than prescriptive. They do not define what is ideal but describe what is most practical given the circumstances. They assert that managers cannot make optimal decisions due to internal and external organizational constraints. Managers cannot gather, analyze, and process perfect and complete information, and therefore, cannot make optimal decisions. Absolute rationality is rare and seldom achieved. Decision-makers utilize whatever information they can gather and process to arrive at the best decisions in the given circumstances. These decisions are satisfactory and do not unduly strain managers' time and resources. They are easy to comprehend and implement. They are made within the limitations of available information and managers' capacity to process the information. These decisions are not optimal but satisfying.

The concept of making decisions within the bounds or limitations of managers' ability to gather relevant information for decision-making and their ability to analyze them optimally is known as the principle of bounded rationality, introduced by Herbert Simon. This model is realistic as it presents a descriptive and probabilistic rather than deterministic approach to decision-making. Decision-makers rely on value judgment and intuition to analyze whatever information they can gather within the constraints of time, money, and ability, and arrive at the most satisfying decision. This model does not represent an optimal situation for decision-making but depicts the actual situation for decision-making. The decision-maker is not merely an economic agent but an administrative figure that combines rationality with emotions, sentiments, and non-economic values held by team members. They adopt a flexible approach to decision-making that adjusts according to the situation. Managers make feasible decisions that are less rational rather than rational decisions that are less feasible.

Creativity in Decision-Making

Meaning

Creativity means creating something new. In the context of business, it means creation of new ideas, new method or new product/service. Max H. Bazerman defines creativity as the cognitive process of developing an idea, commodity, or discovery that is viewed as novel by its creator or a target audience." According to Teresa M. Amabile,: "Creativity is not a quality of a person; it is a quality of ideas, of behaviours or products."

The creative approach to problem solving assumes the following:

1. There is always a better way of doing things. Past precedents, habits and conventional ways of doing things cannot always guide the future courses of action.
2. Problem always has diverse perspectives. Each perspective should be probed, questions should be raised and answers should be found.
3. Things should not be taken for granted. Problems should be redefined and obvious facts should be challenged.
4. There is always scope for improvement. Managers should move from traditional ways to modern, computer-aided ways of managing organisations.
5. Managers should not be afraid of failures. Initial failures will lead to ultimate success.

Creativity in decision-making results in organisational innovations, development of new technology or new products. In the era of globalisation, competition is so intense that creativity is essential for organisations to take decisions that help in their survival and growth. The creativity process requires:

1. Convergent thinking

2. Divergent thinking

1. In convergent thinking, the problem is solved according to pre-defined method or course of action. It pre-supposes a solution to the problem and rationally moves towards that solution.

2. Divergent thinking does not solve the problem in a pre-defined way. It analyses different aspects of the problem, views it in different ways and searches for alternative courses of action to solve that problem.

Creativity Process:

The process of creativity consists of the following steps:

1. Problem Finding or Sensing: The entrepreneur faces a problem and selects to work on it. He feels curious to solve that problem. Curiosity leads to development of idea.

2. Preparation: He concentrates on the problem and starts working on it. He collects the information, analyses how others are using it and formulates hypotheses to work on. If he wants to introduce a new product in the market, he studies the consumer buying behaviour before converting that idea into reality.

3. Gestation or Incubation: He thinks over collected information and makes decisions in his sub-conscious mind. He appears to be idle but actually he is trying to correlate what runs in his sub-conscious mind with the happenings around, to arrive at a sound decision for solving the problem.

4. Insight or Illumination: He thinks of all possible solutions at all times. He thinks of idea while eating, walking or going to sleep. These ideas are put in writing so that he does not forget them in his conscious mind.

5. Verification and application: The entrepreneur proves by logic or experiment that the idea can solve the problem and, therefore, can be implemented. He tests the ideas empirically through mathematical models and experimentation. If it is feasible, he applies it to solve the problem.

Climate for Creativity:

To be creative, managers create a climate that encourages creativity. This can be done in the following ways.

1. Recognize the need for change: Though people are generally resistant to change, accepting the need for change is necessary to promote creativity. People must feel that they will be benefited by change.

2. Encourage new ideas: The manager should clarify that he welcomes new ideas. Listening to new ideas and implementing the profitable ones encourages a creative climate in the organisation.

3. Interaction: Interaction with people within and outside the enterprise encourages exchange of useful information and generation of new ideas.

4. Tolerate failure: New ideas may prove to be failures. People should not get disheartened. They should consider investment of time, money and energy in ideas that have failed as investment for bright future prospects.

5. Clear objectives: Managers must have purpose for creativity. They should know what ideas to be tried, when and for what. Clear objectives will optimise the use of time, energy and money.

Components of Creativity:

Teresa M. Amabile enumerates three components of creativity.

1. Domain skills: A manager can be creative in decision-making if he is theoretically and conceptually aware of the problem and its relevance to the environmental factors. In other words, he must have knowledge of the problem area and also the talent and ability to solve that problem. This is known as domain skill.

2. Creativity skills: The skills to do creative things; to think of new ways of doing existing work, to think of new avenues of marketing the product are the creative skills that a manager must have to carry out the decision-making process.

3. Task motivation: Managers do not peform organisational tasks for earning only financial rewards. Money or financial considerations are not the only motives for taking up a novel task. Ego satisfaction and morale boost up are also the considerations that lead to creativity in decision-making.

Techniques of Promoting Creativity

The following techniques promote creativity in group decision-making.

1. Brainstorming
2. Nominal group technique
3. Delphi technique
4. Synectics

1. Brainstorming: All members of the group associated with decision-making think and generate new ideas and ways of doing a particular task. It generates as many ideas or decision-making alternatives as possible for solving a problem.

(a) The problem is clearly identified and presented to the group so that members can completely concentrate on the problem.

(b) Members give ideas to solve the problem. The aim is to generate as many ideas as possible as the focus is quantity and not quality. Though some of the ideas may not be useful, it generates a list of ideas some of which may be useful in solving the problem. Members are not inhibited by financial or organisational constraints in generating ideas. There is free flow of communication amongst members so that maximum numbers of ideas are generated.

(c) No idea is criticised because the purpose of brainstorming is to promote idea generation rather than limit the alternatives. Evaluation of ideas is done at a later stage. Brainstorming promotes creativity as members feel enthusiastic and energised to offer ideas which they feel important for decision-making.

2. Nominal group technique: Without criticizing the ideas offered by members of the group, all the suggestions are evaluated against each other and outcome is selected which represents consensus of members. Nominal group technique restricts communication amongst group members. It resolves conflicts by allowing group members to rank the ideas in the order of priority. It works as follows:

(a) The group leader outlines the problem to the members.

(b) Every member writes his idea independently and gives his opinion about the best solution.

(c) After all the members have written their ideas, they are presented to the group for discussion and evaluation.

(d) After discussion, the ideas are ranked in the order of priority by the members and a general consensus is arrived at. If no decision is made, the voting and ranking procedure is repeated until the final decision is concluded.

3. Delphi Technique: This technique is useful where respondents are geographically spread over large areas and do not have face-to-face interaction with each other. In this technique, a questionnaire is prepared and mailed to the respondents. They fill the questionnaire and mail it back to the sender. The results are tabulated and used for designing a revised questionnaire. This is again sent to the respondents along with the original results. This helps them in giving subsequent responses to the questions. The process is repeated until the consensus is achieved on finding solution to the problem. Since this is a written form of finding solutions to the problems, the respondents express their opinion freely. They are not pressurized by personal biases and prejudices. However, this is a time consuming method of collecting responses and should be used only if time for making decisions is not a constraint.

4. Synectics: This technique was introduced by William J. Gordon and was, therefore, originally called the Gordon technique. Subsequently it came to be known as Synectics. In this technique the leader of the group reveals the problem to the members of the group so that they do not jump to conclusions in the first instance. Through gradual and continuous interaction, the group members arrive at the best solution to the problem.

Challenges Facing Decision Makers

Decision-making has never been easy. It is increasingly challenging, especially, to managers in the 21st century business environment. In an era of revolutionary changes in government and the business world, the pace of decision making has assumed considerable speed and precision. Today's decision maker faces a host of tough challenges in addition to having to cope with high speed demanded by decision making in digital age. Some of these challenges include: demand for making complex streams of decisions almost at the same time, the problem of making decisions on the face of uncertainties, and the making of complex decisions under perceptual decision traps (Kreitner, 2007).

Above all, today's decision-making context is not so neat and tidy, but full of complexities and problems. A knowledge of the following factors contributing to decision complexities can help decision makers successfully navigate through difficult decision-making terrains:

(a) Multiple criteria: Typically, a decision must satisfy a number of criteria. These criteria include representing the interest of different groups, identifying stakeholders and balancing their conflicting interests and representing the interest of customers to retain their patronage. The issue of managing multiple interfaces of conflicting demands and interests is a nightmare for today's decision makers (Hammond, 2006).

(b) Dealing with Intangibles: Intangible factors such as customer goodwill, employee morale, and increasing bureaucracy often determine decision alternatives. Because these factors are intangible, they demand careful thought, tact and diplomacy to navigate through them successfully.

(c) Long-term Implications: Major decisions generally have ripple effect, with one decision taken today and then creating the need for subsequent decision tomorrow. For example, if an organization takes a decision to open a bank account with a view to obtaining future credit facilities, chances are that, a meeting has to be called again at a later date to decide on the choice of bank after the Financial Controller would have obtained full information on the facilities obtainable from different accessible banks.

(d) Inter-disciplinary Input: Decision complexity is greatly increased when specialists such as lawyers, customer advocates, tax advisers, accountants, engineers, and production and marketing experts are to be part of the decision-making team. The views and fears of different experts have to be weighed and analyzed before a decision is taken. It is a bit difficult to harmonize the views and expectations of experts in different fields into one decision-making opinion. Some executives question the idea of bringing-in many experts from different fields to make a decision since too many cooks could spoil the broth.

(e) Pooled Decision-Making: Rarely is a single manager totally responsible for the entire decision process. This is why we have board of directors, management team, and various committees to look at specific issues in an organization. This can be explained in the common saying that "two good heads are better than one." The various groups would meet, brainstorm and share best practices aimed at producing better outcome.

(f) Rick and Uncertainty: Along with every decision alternative is the chance that it may fail in some way. Poor choices can prove costly. Yet the right decision can open up new vista of opportunities. Moreover, Managers of business organizations today make decisions under two conditions. These are; conditions of certainty and uncertainty. A condition of certainty exists when there is no doubt about the factual basis of a particular decision, and its outcome can be predicted with a fair degree of accuracy. The concept of certainty is useful mainly as a theoretical anchor point on a continuum of likely and unlikely events. In a world filled with uncertainties, certainty can only be relative rather than absolute. Condition of uncertainty exists when little or no reliable factual information is available. Decision-making under conditions of uncertainty is a great headache for managers. A manager is forced to decide on some future event whose outcome cannot be predicted.

(g) Frankenstein Monster Effect in Decision-Making: The law of unintended consequences, according to experts on the subject states that "you cannot always predict the results of purposeful action." Although, unintended consequences can be positive or negative, it is the negative ones that are really troublesome and they have been called the "Frankenstein Monster Effect." This is a situation where an invention goes out of control to harm the inventor. Some decision-makers give little or no consideration to the full range of likely consequences of their decisions. Although, unintended consequences cannot be altogether eliminated in today's complex world of decision-making, they can be moderated, to some extent, through creative thinking and careful consideration when making important decisions (Kreitner, 2007).

Hidden Pitfalls in Decision-making

Before making decisions, seasoned managers assess the situation they face. However, some managers exhibit excessive caution, taking costly measures to guard against improbable outcomes. Conversely, others display overconfidence, underestimating potential outcomes. Still, many are highly susceptible, allowing past memorable events to influence their perception of current possibilities (Hammond, 2009).

Decision-making stands as the paramount task for any executive, yet it is also the most challenging and perilous. Poor decisions can inflict severe harm on a business and a career, sometimes irreversibly. Hence, understanding the origins of bad decisions becomes crucial. Often, they can be attributed to flaws in the decision-making process: ill-defined alternatives, inadequate information collection, or inaccurate cost-benefit analysis. However, at times, the fault lies within the decision maker's mind. The way the human brain operates can undermine our decisions.

Human Brain and Decision-making:

Researchers have long studied the brain's functioning during decision-making, revealing the use of unconscious routines to manage the complexity inherent in most decisions. While these routines generally serve us well, they are not foolproof. For instance, in judging distance, our minds often rely on a routine equating clarity with proximity. However, this mental shortcut can lead to distortions, especially in hazier conditions. For professionals like airline pilots, such distortions can be catastrophic,necessitating reliance on objective distance measures alongside visual cues for precision and safety.

Identification of Psychological Traps:

Research has identified various flaws in decision-making, ranging from sensory misperceptions to biases and irrational anomalies in thinking. What makes these traps perilous is their invisibility, as they are ingrained into our thinking process. Executives, whose success hinges on accurate daily decisions, face heightened risks from these psychological traps, which can jeopardize endeavors from new product development to corporate survival plans.

Compensation for Psychological Traps:

While executives cannot eliminate these inherent flaws, they can emulate airline pilots by understanding and compensating for them. By recognizing and addressing these traps, executives can enhance the accuracy and effectiveness of their decision-making processes. Some of other well-documented psychological traps that are particularly likely to undermine business decision making are examined below:

Anchoring Trap

Anchoring is a mental phenomenon which leads the mind to give disproportionate weight or consideration to the first information it received. In other words, the initial impression received conditions (or anchors) subsequent thoughts and judgment. In business, one of the most common types of anchors is past event or trend. A marketer attempting to project the sales of a product for the coming year often begins by looking at the sales volume for the past years. Those old figures become anchors on which the forecaster will base his judgment. This approach, while it may lead to a reasonably accurate estimate, tends to give too much weight to past events and not enough weight to other current factors. In situations characterized by rapid changes in the market place, historical anchors can lead to poor forecasts and misguided choices (Hammond, 2006).

Status –Quo Trap

We all like to believe that we make decisions rationally and objectively. But the fact is that, we all carry biases, and those biases influence the choices we make. Decision makers display, for example, a strong bias towards alternatives that alter the status quo, or novel changes that remove us from our present comfort zone. On a more familiar level, you might have succumbed to this bias in your personal financial decisions. People, for example, inherit shares of stocks that they would never have bought themselves. Although, it would be a straightforward proposition to sell off those shares and put the money into a more profitable investment, but majority of people would not do that. They would prefer to live with the status quo and avoid taking action that would upset it. “May be I will re-think the matter later," they would say. But that "later" is usually never.

Sunk-Cost Trap

Another deep-seated bias in decision making is to make choice in a way that justifies or seek to correct past bad choice. For instance, we may have refused to sell a stock or a mutual fund at a loss, therefore foregoing other more attractive investments. Or we may have spent enormous resources in an effort to improve the performance of an employee whose hire was a big error in the past thus wasting further resources on a bad investment. Our past wrong decision becomes what economists term "sunk-cost". We know rationally that sunk-cost is irrelevant to the present decision, but nevertheless they prey on the minds of executives, leading them to make inappropriate decisions at the present. Why are people not easily able to free themselves from wrong past decisions? It is because they are unwilling to admit a mistake (Hammond, 2006). In business, a bad decision is often a very public matter, inviting blames and critical comments from colleagues and bosses. If you fire a poor performer whom you hired in the past, you are making a public admission of poor judgment. It seems psychologically safer for you to let him stay on, even though that choice compounds the error and inflicts more injury of loss to the organization.

The sunk-cost bias shows up with disturbing regularity in the banking sector, where it can have serious consequences. When a borrower's business runs into trouble, a lender will often advance additional funds in the hope that the business will use that "bail-out" fund to recover. If the business recovers, that is a wise investment. But if, unfortunately, the business continues to limp, the whole effort will be tantamount to throwing good money after a bad one. Sometimes, corporate culture reinforces the sunk cost trap. If the penalties for making a wrong decision that leads the organization to a loss is very serious, managers will be motivated to let failed projects linger on endlessly, in the vain hope that, some-day, the invisible hand of nature will transform them into success. Executives should therefore recognize that, in an uncertain world where unforeseen events are common, good decisions can sometimes lead to bad outcomes. By acknowledging that some good ideas may end up in failure, executives should be encouraged to admit mistakes and own up to their own errors in all circumstances in order to save unwarranted corporate costs (Hammond, 2006).

Concept of "Ugly Decision Problem" and "Nice Decision Problem"

An organization does not just make decision into the thin air. Every decision is based on solving a particular problem in an organization. That problem could involve performance of a particular task or executing a project. Traditionally, a problem is an ugly situation or something that creates worry, inconvenience and discomfort to an individual or an organisations. An organisation will, first of all, identify the problem, define it, and then generate alternative courses of action for solving the problem. Decision will then be made on the choice of the alternative that has the highest probability of solving the problem. Latest research on decision making and problem solving led to the emergence of a new concept in decision-making and problem solving. This is the concept of “ugly decision problem” and “nice decision problem.” Ugly decision problem stands for a decision matter that creates, worry, inconvenience and trouble to the decision maker. On the other hand, a nice decision problem is one that does not create worry, inconvenience or trouble to the decision maker. They are elements of decision problems that give joy and satisfaction to the decision maker. The decision maker relaxes in his sofa chair happily while making the decision. Here is an example of a nice decision problem: Assuming you have a reasonable sum of money in your bank account and the problem you have now is how to invest this money wisely to create additional wealth. This is certainly a nice decision problem (Obi, 2014).

Conclusion

Decision-making remains one of the most important functions of an executive. The success or failure of a business organization depends, to a large extent, on the soundness and effectiveness of management decision making. Decision making involves a choice from many available alternatives. To choose the best alternative requires careful identification and deliberate assessment of all the other options. In a business organization, the best decision is that which improves profitability, widens market share, strengthens competitive position and adds other values to the organization. A manager must constantly engage critical thinking and logical reasoning to enable him make right decisions at all times. If a manager is short of making right decisions in his day to day functions, the business will die. In the same vein, if a scholar in the education industry fails to publish journal articles and academic textbooks, such a scholar would perish without promotion and recognition (Obi, 2016). Business executives make different types of decision in their job every day. Sometimes these decisions and other requests on them are complex and opposed to each other thus demanding a compelling experience in balancing act on the part of the executives. Some of the major decisions an executive makes on daily basis include; programmed and non-programmed decisions, major and minor decisions, and individual and group decisions. Managers of organizations must guard against decision traps that can lead them into wrong decisions. The most common decision traps include; the anchor trap, the status quo trap and the sunk-cost trap. Wrong decisions must be avoided at all times because they give rise to loss of funds, waste of material resources, reduced earnings and inability to achieve set goals and objectives.

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