Ministry of Education and Science of Ukraine

Ukrainian-American Concordia University

Department of International Economic Relations, Business & Management

Bachelor's Qualification Work

Management Decision-Making Technology

(on the basis of "St. Panteleimon Charitable Foundation to help sick people")

Bachelor's student of
Field of Study 07 – Management and Administration
Specialty 073 – Management
Educ. program – Management

Iryna Sikorska
(*First Name, Last Name)*

Research supervisor

Liubov Zharova
(*First Name, Last Name)*
PhD of Science in Economics
(academic degree)

Kyiv – 2023

Abstract

The integration of technology in management decision-making has gained increasing attention in recent years. The purpose of this empirical study is to explore the implementation of managerial decision-making techniques in the context of non-governmental organizations. The work summarizes different managerial approaches, analyses the evolution of decision-making techniques, and examines the impact of technologies on their choice. A case study is focused on a small non-profit company in the healthcare sector. Data has been collected through observations, surveys, document analysis. The findings of the study indicate that the implementation of various decision-making techniques, including stakeholder, force field, cost-benefit analyses, can enhance the efficiency of the performance within the organization. The research highlights the importance of adopting a structured and systematic approach to decision-making and provides insights into the potential benefits of applying managerial decision-making techniques in the non-governmental sector.

Keywords: management decision-making, non-governmental organizations, decision-making techniques, managerial models, technology, data analytics.

Анотація

Інтеграції технологій у процес прийняття управлінських рішень приділяється все більше уваги останнім часом. Метою цього емпіричного дослідження є вивчення впровадження технік прийняття управлінських рішень у контексті неурядових організацій. У роботі узагальнюються різні управлінські підходи, аналізується еволюція методів прийняття рішень і досліджується вплив технологій на їхній вибір. Кейсове дослідження присвячене некомерційній компанії у сфері охорони здоров'я. Дані зібрано шляхом спостережень, опитувань, аналізу документів. Результати роботи показують, що впровадження різних методів прийняття рішень може підвищити ефективність роботи в організації. У ході дослідження підкреслено важливість застосування структурованого та системного підходу до прийняття рішень і зазначено потенційні переваги застосування методів прийняття управлінських рішень у некомерційному секторі.

Ключові слова: прийняття управлінських рішень, неурядові організації, техніка прийняття рішень, управлінські моделі, технологія, аналіз даних.

PHEE-institute «Ukrainian-American Concordia University»

School of Management and Business
Department of International Economic Relations, Business and Management

Educational level: **bachelor degree**
Specialty: 073 "Management"

Educational Program "Management"

APPROVED

Head of Department Prof. Liubov Zharova

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TASK
FOR BACHELOR'S QUALIFICATION WORK

Iryna Sikorska
(Name, Surname)

1. Topic of the work: Management Decision-Making Technology (on the basis of "St. Panteleimon Charitable Foundation to help sick people")

Supervisor of the work Liubov Zharova, Dr of Sci in Economics.
(surname, name, degree, academic rank)
Which approved by Order of University from "22" September 2022 № 22-09/2022-3c

2. Deadline for bachelor's qualification work submission "23" April 2023
3. Data-out to the bachelor's qualification work_
Materials from internship received during consultation with representatives of the company. Information from open resources in the Internet, official reporting of financial and economic activities of the enterprise.

4. Contents of the explanatory note (list of issues to be developed).

There are main topics a student should develop in this work:

- The concept of decision-making in strategic management of modern business
- Case study of "st. Panteleimon Charitable Foundation to Help Sick People" in the scope of strategic management
- Implementation of mixed decision-making techniques in a management model of the organization

5. List of graphic material (with exact indication of any mandatory drawings)
Graphs and figures for analysis of economic and statistical information on the company and its development, visualization of development mechanism, etc.

6. Consultants for parts of the work

Part of the project	Surname, name, position	Signature	
		Given	Accepted
1	Liubov Zharova, Dr. of Sci. in Economics		
2	Liubov Zharova, Dr. of Sci. in Economics		
3	Liubov Zharova, Dr. of Sci. in Economics		

7. Date of issue of the assignment

Time Schedule

№	The title of the parts of the bachelor's qualification work	Deadlines	Notes
1.	I chapter	31.12.2022	In time
2.	II chapter	20.02.2023	In time
3.	III chapter	11.04.2023	In time
4.	Introduction, conclusions, summary	23.04.2023	In time
5.	Pre-defense	27.04.2023	In time

Student _____
(signature)

Supervisor _____
(signature)

Conclusions:
The work was completed according to the schedule and according to the plan. The student diligently followed all the recommendations and regularly improved her work. The goal is formulated correctly and corresponds to the specifics of the research and specialization of the direction. A review of the literature allows us to assess the level of research as sufficient. The structure of the work is logical and integral. Among the results, a comprehensive assessment of identifying problems and finding solutions in international practice proposed ways of developing the strategic decision-making process to increase the efficiency of the enterprise's activities deserve the most attention. The rationale of the mixed management model and its impact on improving the efficiency of the enterprise's activity are also proposed. The work deserves the highest evaluation and support in defense.

Supervisor _____
(signature)

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INTRODUCTION

Decision-making technology is a critical aspect of any organization. Effective decision-making can help corporations achieve their goals, respond to a changing market environment, and maintain a competitive edge. However, choosing the best alternative can be a complex and challenging process, which requires certain skills such, as critical thinking, ability to analyze, evaluate and prioritize data. Over the decades, scholars and practitioners have developed various theories and approaches to decision-making. The purpose of this research paper is to explore different models and managerial techniques, and to assess their effectiveness in different organizational contexts.

Understanding decision-making frameworks is essential for managers and executives, as it allows them to make more informed choices and take actions that lead to the achievement of their goals. Moreover, the world today is fast-paced and constantly evolving, therefore, the decisions that managers make within the organization can have a profound impact on their success or failure. With the invention of new technologies, decision-making methods, tools, and techniques have developed over the recent years. One of the most significant advancements in decision-making is the integration of computer-based systems that help managers make choices. Additionally, this study aims to identify strengths and weaknesses of various decision-making models, techniques, and frameworks, provide guidance on selecting the most appropriate approaches, and offer insights into how organization can make better decisions.

The relevance of the paper's topic is supported by numerous scientific researches which demonstrate that effective decision-making has a strong impact on the performance, profitability, and sustainability of the organization. Moreover, it can lead to better resource allocation, increased innovation, and improved customer satisfaction, which overall contributes to the success of the company. For instance, a study conducted by McKinsey & Company (2019) found a strong correlation between effective decision-making and organizational performance. The study analyzed the decision-making practices of more than 1,000 companies across different industries and geographical locations. The research provided empirical evidence that companies with strong

decision-making capabilities had a 6% higher profit margin than their rivals. Thus, the study highlighted the need for organizations to invest in developing their decision-making techniques in the fields of data analytics, governance, strategic planning, and corporate culture of continuous improvement.

The object of the paper is the concept of decision-making, managerial models and techniques applied in the process of making informed decisions.

The subject of the paper - "St. Panteleimon Charitable Foundation to help sick people".

The aim of the bachelor's thesis is to define the concept of decision-making, assess the current usage of decision-making techniques, and evaluate their effectiveness in achieving the goals of the organization.

The purpose of this research envisages the fulfillment of the following **tasks**:

- to analyze the evolution of decision-making techniques and systematize managerial approaches to a decision-making process;

- to examine the impact of technologies on the choice of decision-making techniques;

- to analyze the features peculiar to a nonprofit organization;

- to conduct a research on the state of affairs and challenges faced by the company in the framework of making decisions;

- to assess the appropriateness and effectiveness of the current usage of decision-making techniques;

- to develop a comprehensive evaluation of the existing problems and their solutions in the international practice;

- to design the ways of developing the process of making strategic decisions;

- to develop a mixed managerial model and assess its impact on the improvement of the company's performance.

To achieve the research objectives, the following **methods** will be employed: descriptive literature reviews, statistical and mathematical analyses of data, observations, surveys, interviews, and case studies.

The theoretical basis of the research involves theories and concepts from various fields, such as management, decision science, organizational behavior, and psychology. It provides a framework for understanding the issue of the research, developing the tasks of the work, and analyzing the data collected.

A practical value of the paper consists in the possibility of usage of the applied techniques and results of the research by organizations and managers regarding decision-making processes.

The bachelor's thesis consists of the introduction, three chapters with conclusions to each of them, the general conclusions and suggestions, a list of references, and 2 annexes. The work contains 10 tables, 16 figures, 3 equations, and 52 sources (i.e., academic books, articles in professional journals, statistical data from official government websites, industry reports, and market researches).

The first chapter "The concept of decision-making in strategic management of modern business" gives a critical review of scientific literature regarding the problem of the concept of decision-making and provides a historical background of the study. It deals with the following issues: decision-making models and support systems, their main characteristics, and the impact of technologies on their choice.

The second chapter "Case study of "St. Panteleimon charitable foundation to help sick people" in the scope of strategic management" concerns peculiarities of non-governmental organizations, analyses of a current state of affairs and challenges faced by the company, as well as studies of the relevance and efficiency of using decision-making techniques.

The third chapter "Implementation of mixed decision-making techniques in a management model of the organization" represents qualitative and quantitative researches on the ways of developing the process of making decisions. Moreover, it contains specific recommendations, detailed suggestions, and real-life examples for improving the organization's performance.

CHAPTER 1.

THE CONCEPT OF DECISION-MAKING IN STRATEGIC MANAGEMENT OF MODERN BUSINESS

1.1. The evolution of decision-making techniques

Decision-making is an essential part of modern management. The primary function of every organization is to make rational sound decisions. Every day hundreds of decisions are made either consciously or subconsciously. They are the foundation of any managerial process. These choices are crucial because they impact operational activities, determine the diversity of organizational settings, reduce complexity, and maximize the benefits of the business. According to an American management consultant Peter F. Drucker, "Whatever a manager does, he does through making decisions" (Drucker, 2012, p. 304). Decisions may be made even as a matter of routine; otherwise, they may influence the whole existence of an enterprise and need to be systematically analyzed by future generations.

A decision can be defined as "a cause of action purposely chosen from a set of alternatives to achieve organizational or managerial objectives or goals" (Venkatesha, 2021, p. 49). A wide variety of dictionaries (Oxford Advanced Learner's Dictionary, Merriam-Webster, Cambridge, Collins, Longman, MacMillan, and Britannica Dictionary) also identify the term decision-making as the process or act of making important choices, selecting a course of action, especially in a group of people or in an organization to solve a problem.

The development of decision-making theory in the modern era started in 1938 when Chester Barnard, the author of *The Functions of the Executive*, imported the term decision-making into the business world, where it replaced narrower descriptors such as "resource allocation and policy making" (Buchanan & O'Connell, 2006). However, the history of applying decision-making techniques can be traced back to earlier times. The evolution of these theories is presented in the timeline chart (fig. 1.1).

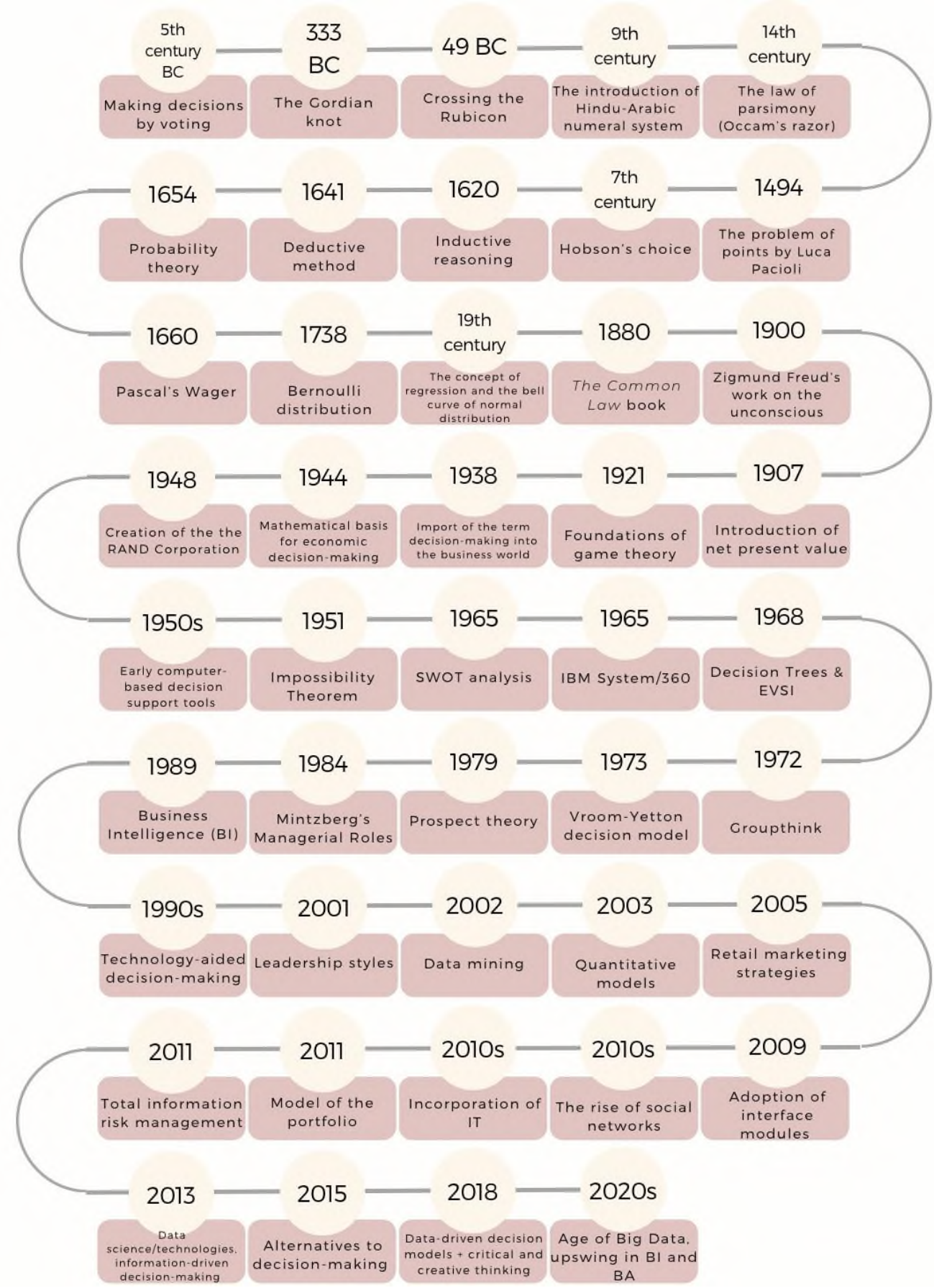

Figure 1.1. The Evolution of Decision-Making Techniques

Source: Compiled by the Author

The questions of who makes decisions and how they are made have always shaped the world's governance, justice, and social order systems. According to the chronological review of decision-making techniques, an early form of democratic self-government was born in Athens, where male citizens started to make decisions by voting. Moreover, ancient times provided us with two powerful metaphors in decision-making: to cut the Gordian knot (i.e., demonstration of how bold actions can solve complex problems) and to cross the Rubicon (i.e., to do something that you cannot later change and will strongly influence future events).

It is worth noting that decision-making by using machine learning algorithms (i.e., a binary code system consisting of numbers 1 and 0) became possible only due to the introduction of the Hindu-Arabic numeral system, which included zero. The result was a refined counting scheme where the value of each symbol was determined by its column position (Sanchez & Canton, 2017). This ninth-century discovery simplified calculations and, therefore, helped to evaluate potential risks.

The medieval period also contributed to the development of decision-making techniques, e.g., English Franciscan friar William of Ockham introduced the law of parsimony known as Occam's razor (Salicru, 2017, p. 69). This problem-solving principle means that the best theory is the simplest one, and a model with fewer parameters is to be preferred. Moreover, Italian mathematician and monk Luca Pacioli proposed the problem of points, which explains that the stakes should be divided in proportion to the number of rounds by each player.

The Renaissance was a period of scientific growth; as a result, a number of decision-making techniques appeared. First, Sir Francis Bacon developed the investigative method known as the first formulation of the modern scientific application of inductive reasoning (McAbee et al., 2017). This type of thinking involves making a logical connection between a cause and a likely effect (making broad generalizations based on specific observations). Second, the French scientist René Descartes proposed that reason was superior to experience as a way of getting knowledge and established the framework for a deductive method (Schechter, 2013). This type of logical thinking starts with a general

idea and reaches a specific conclusion (e.g., deductive reasoning is used to test advertising strategies).

Furthermore, a case of Hobson's choice, i.e., a free choice in which only one thing is actually offered, originated and, since that time, was used to describe an illusion that multiple options are available.

In the seventeenth century, the French inventor Blaise Pascal introduced Pascal's Wager: an argument for believing in the existence of God (Buchanan & O'Connell, 2006). It suggests a logical way to come to a rational decision. The logic of Pascal's Wager says that the consequences of being wrong, rather than the likelihood of being wrong, is paramount (e.g., while struggling with hard-to-handle investment decisions, it is necessary to ask a question about which decision, if incorrect, is worse).

In the eighteenth century, the Swiss mathematician Daniel Bernoulli laid the foundation of risk science (known as Bernoulli distribution) by examining random events from the standpoint of how much an individual wanted or was frightened of each possible outcome (Chen & Yang, 2000). It became a classic occurrence model in enterprise risk management (e.g., the probability of risk occurrence can be estimated by dividing the risk's observed events by the number of observation years).

In the nineteenth century, German mathematician Carl Friedrich Gauss came up with the concept of regression and developed a structure of the standard distribution bell curve. It laid the groundwork for ROSI (return on security investment) and overall market sensitivity. Besides, Oliver Holmes gave lectures on common law later published in his book *The Common Law*. Consequently, making laws became a business of legislative bodies, not courts (i.e., separation of powers).

The most significant impact on the decision-making process was made in the twentieth century with the development of computer science and progress in information technologies. These major landmarks defined how information was generated, stored, managed, and used for making better decisions, gaining knowledge, minimizing uncertainty, and conducting successful business.

At the beginning of the twentieth century, Zigmund Freud's work on the unconscious suggested that people's actions and decisions were often influenced by causes hidden in

their minds (Lehpamer, 2012, p. 318). Nowadays, the motivation theory by Freud is mostly used to describe buying habits and preferences of customers. In addition, due to Chester Bernard's work, personal decision-making was separated from organizational one to explain why some employees acted in their company's interest rather than in their own. Barnard tried to clarify what executives should do, how, and why. He combined the concept of decision-making with effectiveness and efficiency, authority and responsibility, cooperation, and conflict, free will and determination, individual and collective organization, private and public, and non-governmental and profitable companies (Isomura, 2021, p. 4).

From the perspective of the economy, many essential decision-making tools were created. For example, the American economist Irving Fisher introduced the term "net present value" known as NPV. It accounts for the time value of money and applies to a series of cash flows occurring at different times, meaning that expected cash flow will be discounted at a rate that reflects a risk of investment. Another American economist Frank Knight distinguished between a risk (in which the probability of an outcome is possible to calculate) and uncertainty (in which the probability of an outcome is not possible to determine). It laid the foundations of game theory, i.e., a study of mathematical models of strategic interactions among rational agents (Buchanan & O'Connell, 2006). It aims to generate answers representing the best compromise between risks and opportunities in the likely future. It has applications in all social science fields, including management and computer studies. Moreover, in their book Theory of Games and Economic Behavior (1944), John von Neumann and Oskar Morgenstern described a mathematical basis for economic decision-making.

The first advances at the hardware and software level started with the collaboration of scientists from the Carnegie Institute of Technology. It led to the development of early computer-based decision support tools and the production of early computer models of human cognition (embryo of AI). In addition, the RAND ("research and development") Corporation, an American nonprofit global policy think tank, was created. Decision makers still use its analysis to establish educational policies, poverty, environment, technologies, and national security.

In the middle of the twentieth century, American economist Kenneth Arrow introduced the Impossibility Theorem in social choice theory which states that when voters have three or more options, no ranked voting electoral system can convert the preference of individuals into a community-wide ranking. The theorem proves that there can be no set of rules for social decision-making that fulfills all requirements of society (Wahid, 2002, p. 49).

The introduction of the SWOT model of analysis also marked these years. Three colleagues from Stanford Institute wrote a technical report in which operational issues were grouped into four components represented by the acronym SOFT (satisfactory, opportunities, faults, threats), which later became known as SWOT (Puyt et al., 2020). This analysis is widely used in strategic planning to make decisions when time is short, and circumstances are complex (internal and external).

One more remarkable event happened during this decade: IBM corporation launched its groundbreaking S/360 mainframe. It marked the beginning of the implementation of management information systems.

Many fundamental decision-making techniques appeared. For instance, Howard Raiffa explained such techniques as "decision trees" and EVSI (the expected value of sample (perfect) information). The Decision Trees analysis visually outlines a complex decision's potential outcomes, costs, and consequences. The introduction of this tool became helpful for analyzing quantitative data and making decisions based on numbers (Kunst et al., 2020).

Moreover, the EVSI analysis is widely used to prioritize research and design future studies to reduce decision uncertainty for policymakers (e.g., EVSI can say how much a business should pay to know exactly the outcome of a decision).

The development of decision-making models from a psychological perspective characterized the following decades. In 1971, Irving Janis, a professor at Yale University, introduced the term "groupthink". Groupthink is a phenomenon that explains how people strive for consensus within a group (people need to set aside their own personal beliefs and adopt the opinion of the rest of the group). Moreover, a Canadian academic, Henry Mintzberg defined ten managerial roles (Ogilvie, 2012), as presented in table 1.1.

Table 1.1. Mintzberg's Managerial Roles

Interpersonal	1	Figurehead	Represents the organization, as well as motivates the team
	2	Leader	Leads a team, a department, or an entire organization
	3	Liaison	Develops and maintains internal and external relationships
Informational	4	Monitor	Identifies problems and opportunities for growth
	5	Disseminator	Shares data and communicates it effectively
	6	Spokesperson	Speaks for the organization, defending the company's interests
Decisional	7	Entrepreneur	Organizes and runs business processes
	8	Disturbance Handler	Fixes the problem, maintaining productivity
	9	Resource Allocator	Determines how and where to apply organizational resources
	10	Negotiator	Participates in negotiations, trying to reach their goals

Source: Adapted from https://www.runn.io/blog/managerial-roles

Based on Mintzberg's managerial roles, Victor Vroom and Philip Yetton formulated a normative leadership style model (Goethals et al., 2004, p. 322). They distinguished five degrees of participation, which are outlined below:

1) Autocratic (AI): the leader solves the problem without communicating with the team.

2) Autocratic (AII): the leader obtains information from subordinates and later makes a decision on a course of action.

3) Consultative (CI): the leader shares the problem with relevant subordinates individually, collects their ideas, and then decides.

4) Consultative (CII): the leader conducts a group meeting, takes into consideration opinions and suggestions of the team members, but makes the decision himself/herself.

5) Collaborative (GII): the leader chairs a group meeting, which is aimed at reaching consensus on a solution.

A few years later, Daniel Kahneman and Amos Tversky developed a "prospect theory" as a part of behavioral economics. Based on results from the studies, the theory demonstrates that the rational model of economics fails to describe how people arrive at decisions while facing the uncertainty of real life (Kahneman, 2011, p. 278). Practically, it means that individuals assess their loss and gain perspectives asymmetrically. Moreover, an American economist W. Carl Kester raised a question of corporate awareness by suggesting that managers thought of investment opportunities as options for the company's future growth (IGI Global, 2021, p. 53).

In 1979, an American researcher John Rockart published his influential article *Chief Executives Define Their Own Data Needs* in Harvard Business Review. He suggested that the decreasing cost and expanding power of computers could enable direct access by senior managers to operational data (Mutch, 2008, p. 86). These ideas led to the development of executive information systems (EISs), which facilitate and support managers by providing easy access to internal and external information relevant to organizational goals. EIS offers graphical displays, simplified user interfaces, robust reporting, and data drilling. Nowadays, the acronym EIS lost popularity and is substituted with the term "business intelligence" (BI).

In 1989, Howard Dresner defined BI as an umbrella term describing concepts and methods to improve business decision-making using fact-based support systems (Power, 2007). The original BI systems were just copies of transactional databases. However, their usage has grown since that time and now covers all support system methods aimed at improving decision-making by gaining knowledge through accessing and analyzing business information (Parra et al., 2022, p. 16). Hence, the decision-making process designs the roadmap to achieve business goals and ensure better performance.

The emergence of BI decision-making tools characterized the beginning of the next decade: reporting, online analytical processing OLAP, dashboard development, data

mining, complex event processing, predicting analysis, etc. Furthermore, the internet, which companies hoped would give them more power to sell, gave customers more power to choose by comparing prices and checking reviews.

In 2001, the Harvard Business Review published the article When to Trust Your Gut, stating that intuition was one of "the x-factors separating the man from the boys". "Straight from the gut" leadership style appeared, meaning that the majority of decision-makers trusted their intuitive skills more than their analytical abilities.

A year later, application service providers introduced software tools across the network. This triggered the development of more powerful techniques of data mining able to find hidden patterns in large databases. In addition, the emergence of quantitative models enabled to prediction preferences of the customers. In turn, it allowed companies to offer customized products and services. Moreover, Canadian journalist Malcolm Gladwell explored the notion that instantaneous decisions were sometimes better than those based on a lengthy rational analysis (IGI Global, 2021, p. 53). As a result, it boosted pop-up marketing, push advertising, and other retail marketing strategies.

The 2010s became known for the rise of social networks and wide adoption of interface modules for devices that generate and display data sets, including images and voice. It required new services-oriented technologies for managing data over the internet. Migration to search engine technologies, opinion mining, and application of social recommendation techniques led to providing customers with predictive suggestions based on their preferences and the preferences of their contacts and peers (Lim et al., 2013). Moreover, this decade marked the beginning of IT incorporation into decision-making processes.

The value of business became measured through such business indicators as benefits, costs, and customer experience. Consequently, a general model for decision-making processes of new product portfolios was proposed. Portfolio management is a set of activities that allows a company to select, develop, and commercialize a line of new products. It aims to maximize the investments' expected to return within an appropriate level of risk exposure. Effective portfolio decision-making is the result of the interaction

between three essential elements of the model: evidence, power, and opinion (Kester et al., 2011). Depending on the balance among them, cross-functional decisions are made.

Recent research conducted at the University of Cambridge have led to what is currently known as total information risk management. TIRM is a holistic framework of concepts, methods, and techniques developed to systematically manage the effects of uncertainty arising from the quality of information (Borek et al., 2011). This decision-making technique is based on the evaluation of information from all possible sources and types. TIRM can help to select, guide, and prioritize the implementation of projects (Borek et al., 2013, p. 164).

Current trends in decision-making processes are related to the rapid changes in analytics and the development of big data. Provost and Fawcett conducted a critical study on the connection between data science, big data technologies, and information-driven decision-making. As a result, two types of decisions that can benefit from data science are the following: first, decisions for which discoveries are made within the data; second, decisions which are repeated at a massive scale, and, therefore, decision-making can benefit from even slight improvements in decision-making accuracy based on data analysis (Provost & Fawcett, 2013).

Nowadays, it is possible to define two trends in decision-making. The first one is to look for alternatives to a decision-making process. The idea is to evaluate all scenarios, tendencies, and accessed technologies and use them for critical and constructive discussion that would lead to better decisions (Schoemaker & Krupp, 2015). Another trend is to take advantage of creative thinking and combine it with data-driven decision models. This way, the outcomes of decisions can be predicted more accurately; moreover, decision-making processes can be significantly improved by using both human managerial skills and AI (Parra et al., 2022, p. 13).

It is significant to highlight the steps of the evolution of decision-making processes because it is a valuable source of ideas and thoughts in order to create new algorithms for keeping track of all decision-making techniques. It can be concluded that they appeared to address the current needs in the management field.

1.2. Managerial approaches to a decision-making process

Modern business cannot become successful without the implementation of decision-making techniques, "decisions made by business people aim to the achievement of business objectives in a manner of satisfying business needs and expectations" (Cao, 2009, p. 9). Thus, making decisions refers to planning, organizing, staffing, leading, and controlling. The role of decision-making in management can be illustrated by means of figure 1.2.

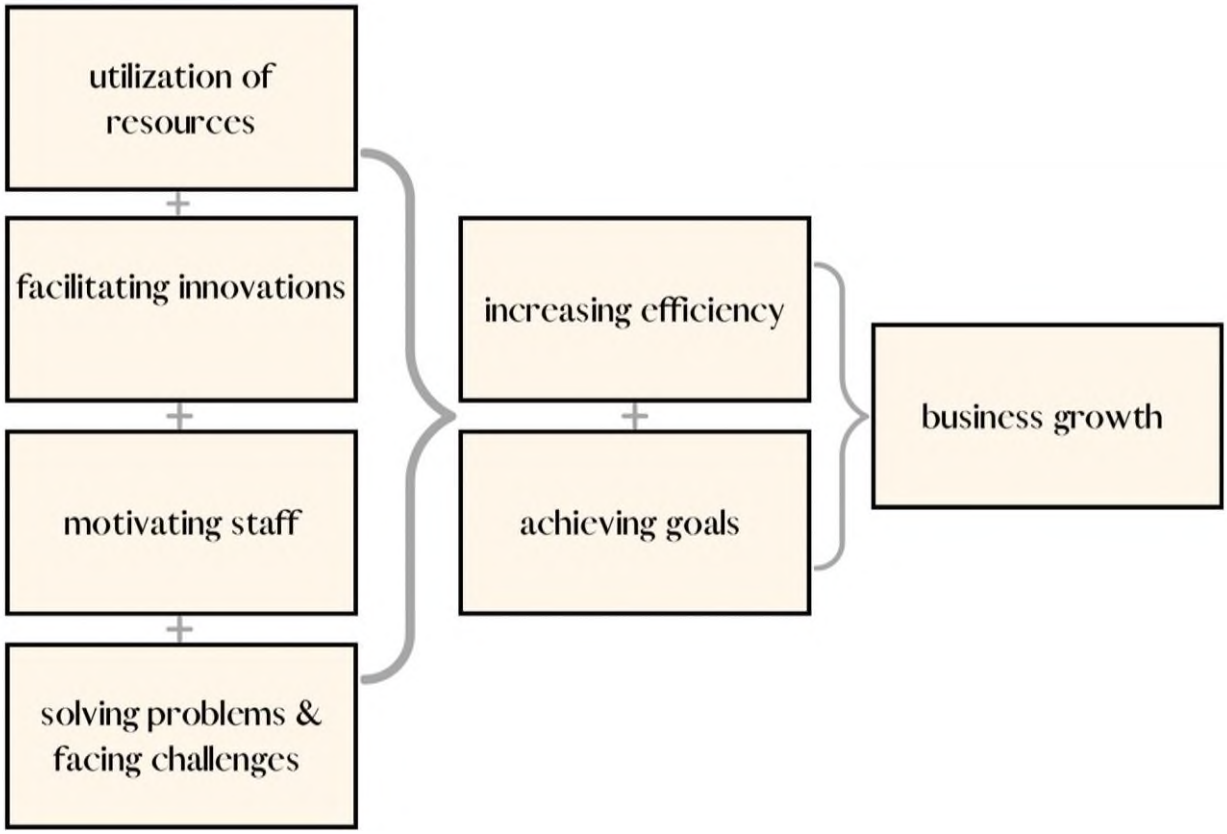

Figure 1.2. Importance of Decision-Making in Management

Source: Compiled by the Author

Rational and logical decisions are made after a deep analysis and evaluation of the current alternatives. They assist in utilizing the available resources in order to achieve the organization's objectives. The available resources are the 6 M's, i.e., manpower, methods, machines, materials, mother nature, and measurements (Southekal, 2022, p. 69). Correct decisions should be focused on all 6 M's.

Moreover, rational business ideas can help facilitate innovations and develop new products and services. It will all give a significant advantage to the company and its staff. When correct decisions are implemented, the organization makes a high profit; therefore, employees receive financial and non-financial benefits. Good decisions also increase the company's efficiency, i.e., higher returns at low cost.

The decision-making process plays a crucial role in any organization, as it is required to ensure its proper functioning, receiving profits, and effective operation. It demands reliable, exact and timely information to support a successful choice of an appropriate decision (Citroen, 2011).

First and foremost, managers and entrepreneurs need to choose a decision-making model in order to apply it while responding to a problem-solving situation. It can be referred to as a decision-making style. According to the *Encyclopedia of Management Theory*, it is "a combination of a person's innate personality-driven preferences with his or her learned and habitual responses that have been developed over time and through experience" (Kessler, 2013, p. 188). Most scholars outline four decision-making models, which are shown in figure 1.3.

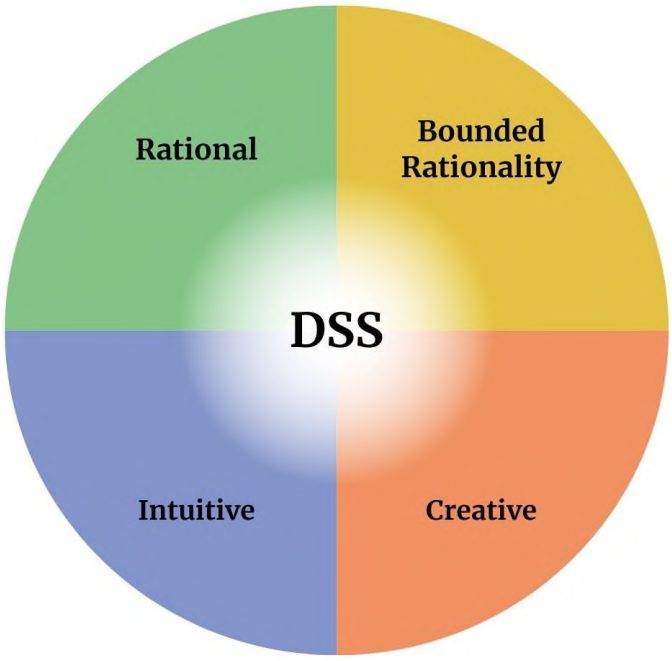

Figure 1.3. Decision-Making Models

Source: Compiled by the Author

Business schools generally train students to follow a rational decision-making model (Robbins, 2009, p. 124). It means that managers "make logical and consistent choices to maximize value" (Robbins, 2015, p. 208). This method is based on facts and reasons: before choosing a particular cause of action, a series of analytical steps is implemented (Uzonwanne, 2016, p. 2). A six-step process of rational decision-making is represented in the ladder diagram (fig. 1.4).

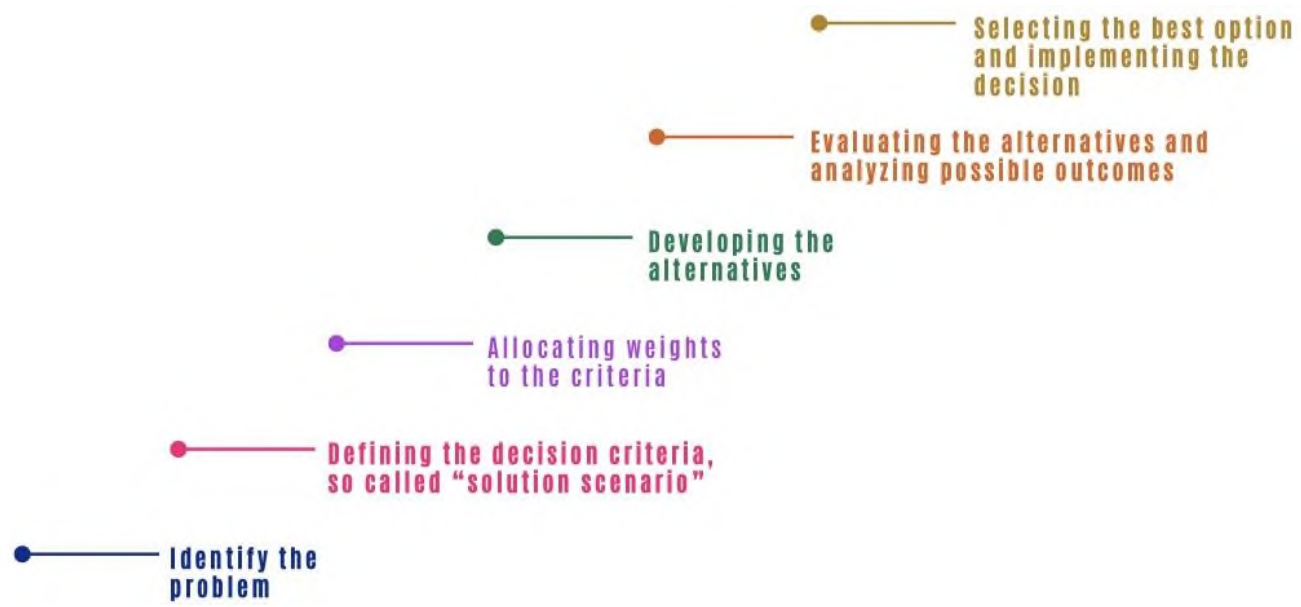

Figure 1.4. Rational Decision-Making Model

Source: Compiled by the Author

Rational decision-making is a strict procedure utilizing objective knowledge and logic (Adam et al., 2022). It assumes that decisions are made in the best economic interests of the company. However, such assumptions are not always realistic: a manager faces not only simple problems in which goals are ambiguous but a number of alternatives also are not limited; there are time pressures and a high risk of costs. That is why many managers operate using a model of bounded rationality. This style focuses on good decisions to address the problem-solving situation.

Because decision-makers cannot analyze all information on all possible alternatives, they "satisfice, rather than maximize" (Robbins, 2015, p. 208). It means that they accept

solutions within the limits of a simple model. So, the solution represents "a satisficing choice – the first acceptable one, rather than an optimal one" (Robbins, 2009, p. 124). The 'organization's culture, internal policies, and power considerations can strongly affect decision-making. Moreover, it can be influenced by "a phenomenon called escalation of commitment, which is an increased commitment to a previous decision despite evidence that it may have been wrong" (Robbins, 2015, p. 209). Human beings have a limited information-processing capability and usually follow well-known paths and look for standard criteria with tried-and-true solutions. Therefore, an average executive chooses a bounded rationality decision-making model in many situations.

In contrast to rational models, intuitive decision-making can be implemented. It is "a non-conscious process created from distilled experience, which relies on holistic associations or links between disparate pieces of information" (Robbins, 2009, p. 124). Making decisions based on a "gut feeling" is a fast process that usually involves emotions. It does not necessarily happen independently of rational analysis; instead, both models complement each other.

Intuitive decision-making is relatively common. According to one survey of corporate executives, it has been found out that almost half of them rely on intuition more than on formal analysis while running their business (Robbins, 2015, p. 209). A manager who has experienced a similar problem or situation often acts quickly, trusting his/her inner feelings and emotions to achieve higher decision-making performance.

It should be stated that a creative approach to problem-solving has always been of interest. Creative thinking is not a universal way to find solutions to all kinds of problems. Indeed, it offers ways to examine basic assumptions and look at daily tasks differently. The concept of creativity involves "breaking down and restructuring our knowledge about the subject to gain new insights into its nature" (Proctor, 2010). The creative decision-making process involves five steps (Gordon, 2022), which are indicated in the diagram below (fig. 1.5).

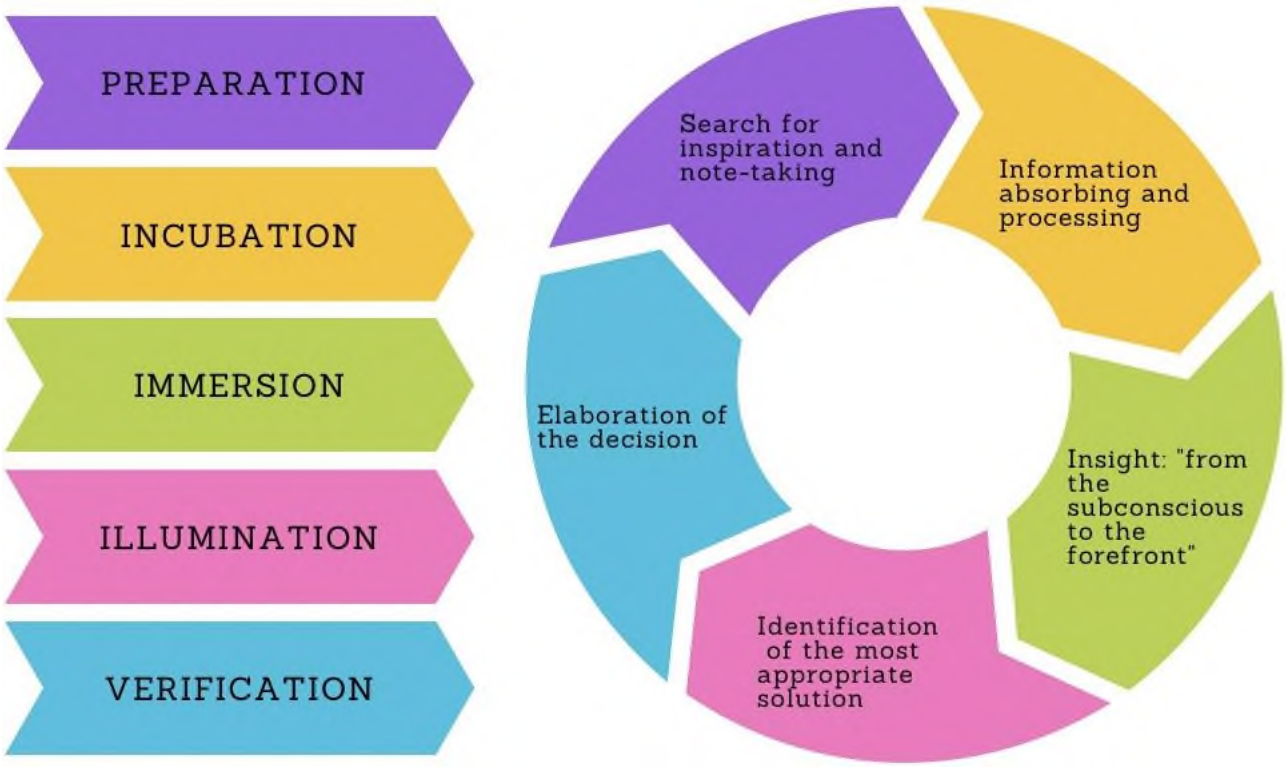

Figure 1.5. Creative Decision-Making Model

Source: Compiled by the Author

While applying this particular style of making decisions, it is necessary to identify task objectives which should be (Johnson, 2001, p. 10):

- Specific rather than vague.
- Measurable, so you can know whether you have achieved what you intended.
- Agreed by the people who have to achieve them.
- Realistic, in order not to be too daunting.
- Time-constrained rather than open-ended.

Thus, the objectives need to be SMART. The level of creativity in decision-making depends on three factors (Yuizono et al., 2014, p. 58):

- the fluency of ideas that is defined as the ease at which managers provide reasonable and thoughtful ideas;
- the flexibility of ideas which is based on the diversity of viewpoints;
- the originality of ideas which is evaluated according to their uniqueness.

Although many executives have been taught to use their logic and reasoning to make decisions, the future is unpredictable, and the key is to be open to new challenges and not be frightened of taking risks.

To sum up, it is worth noting that decision-makers face increasingly stressful environments and uncertain circumstances. They are overloaded with information, and their surrounding is highly competitive and fast-paced. That is why managers need to choose an appropriate decision-making model to run their business. Their role is not only a matter of applied intuition; mainly it is about their knowledge, experience, skills, hard work, and practice.

1.3. The impact of technologies on the choice of decision-making techniques

It is inevitable that technologies are advancing almost every industry in the world that is becoming increasingly digital. Companies need to respond swiftly to changes in a dynamic and fast-paced business environment. The solution is to find systems that can make decision-making simple, quick, and with minimal friction.

Every decision made by an executive can influence the success of a company from a long-term perspective. Currently, all business operations and activities require the use of technologies. They help evaluate resources, speed up various processes, detect possible backlogs, distribute the workload, better collaborate within a team, update employees on how to carry out tasks, and, therefore, increase the company's efficiency.

Information is also a fundamental component of all decision-making processes. Finding a balance between hard (objective, systematic, quantitative) and soft (related to the subjective and qualitative aspects) information is essential. Technologies rely more on complex information, which can be easily collected, stored, and transmitted electronically (Liberti & Petersen, 2018, p. 4). Besides, acquiring information from external sources should be structured but flexible. The development of complex systems assists decision-making by changing unstructured and multivariate environments to provide specialists with framed routines for solving real problems (Parra et al., 2022, p. 9). The modern era is characterized by a growing interest in further development of such

systems and methods for making group decisions based on multiple criteria and attributes (Parra et al., 2022, p. 10).

According to various classifications, decisions can be divided into different groups. However, not all of them are connected with this paper's subject, which is why only the most relevant will be outlined here. The first category, which will be analyzed, covers programmed and non-programmed decisions proposed by Herbert A. Simon, an American political scientist. Programmed decisions deal with problems that are familiar, common, and frequently occurring; the situation in which is well-structured (Boddy, 2008, p. 216). These decisions are repetitive in nature, meaning they are taken based on the organization's existing policy, rule or procedure. Computers handle many decisions of this type (e.g., processing orders, developing weekly work schedules for employees, etc.). Otherwise, non-programmed decisions are taken to deal with unstructured situations and, as a result, require a unique solution (Boddy, 2008, p. 217). Such decisions depend on judgment and intuition.

The types of decisions vary according to their level within the organization: lower-level staff typically handles routine-structured problems that can be resolved by applying procedures; as employees move up the hierarchy, they face non-programmed decisions that require a custom-made solution for the problem in which the information is either lacking or unclear. The complexity of the situation also influences the process of making decisions, and a series of criteria is usually implemented to ensure the effectiveness of the desired outcome. Hence, modern business requires an increase and improvement in a number of tools, technologies, and methodologies called decision support systems (DSS) which can provide a way to handle the challenges in the decision-making process "within the current dynamic market environments where data and information are abundant and crucial to the success of organizations" (Parra et al., 2022, p. 2).

Decision support systems (DSS) are computer program applications used to improve the decision-making capability of a company (Majumder & Dey, 2022, p. 25). DSS are informational applications that provide users with relevant facts based on different data sources. A typical DSS consists of:

- A database (it contains appropriate data related to the situation and is managed by the database management system software, which is connected to the corporate data warehouse),
- A model base (a software package that includes statistical, financial, managerial patterns, or other quantitative models that offer analytical capabilities; it is the simulation of a real-world system that can predict how outcomes will change the situation if different adjustments are made to the system),
- A knowledge-based subsystem (it is provided via a web browser; contains both internal and external sources),
- A user interface (it enables easy system navigation, examples include simple windows, complex menu-driven interfaces and command-line interfaces).

The components of DSS and connections between them are introduced by means of the figure 1.6.

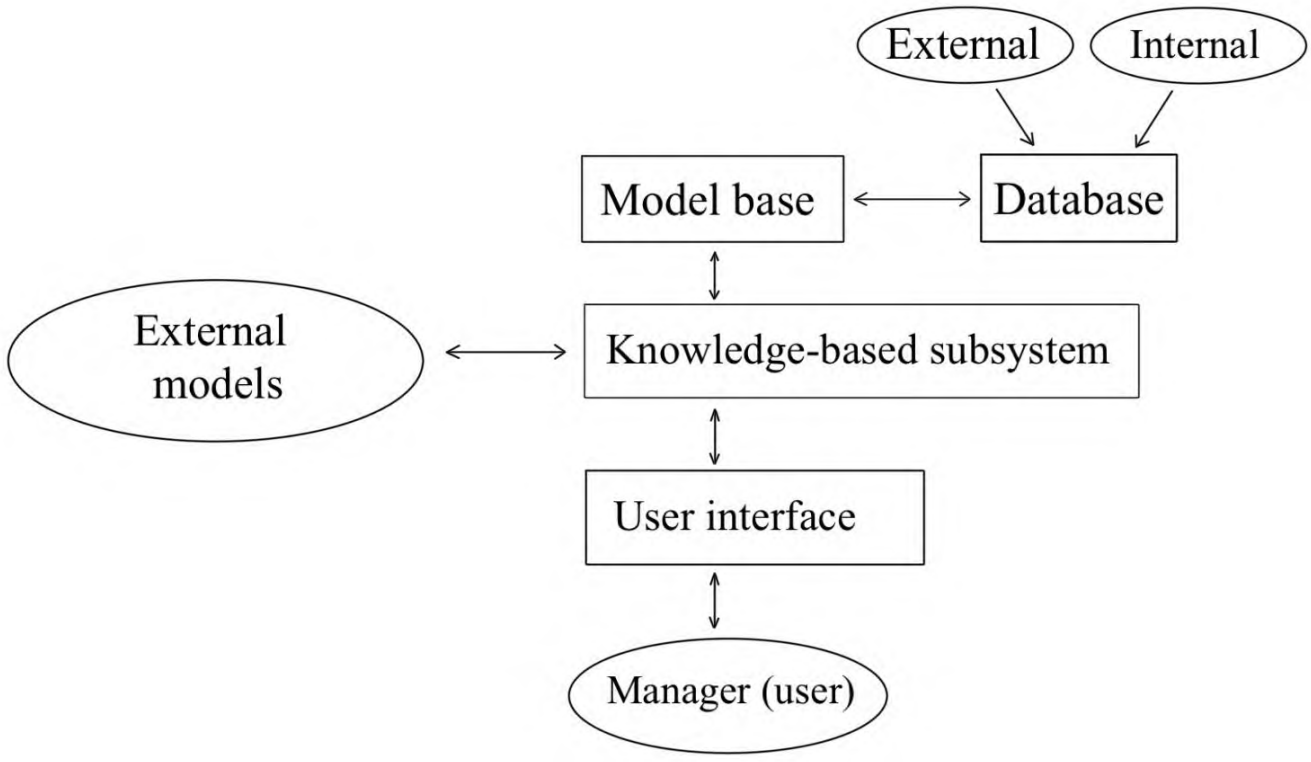

Figure 1.6. Structure of Decision Support Systems

Source: Compiled by the Author

According to Daniel J. Power, a professor of information systems and management, DSS can be categorized in terms of the main component: providing the dominant functionality, purpose, intended users, and enabling technology (Power, 2002, p. 12). The classification of DSS based on this framework will be described in the following paragraphs.

The first category of DSS is data-driven. These systems emphasize the analysis of large amounts of structured data, such as:

- file drawers (a document management system that converts paper filing systems into electronic ones),
- management reporting systems,
- data warehousing (it enables the manipulation of data by computerized tools tailored to a specific task and setting),
- executive information systems (they facilitate and support senior executives with information and decision-making needs by providing easy access to internal and external information relevant to organizational goals),
- spatial DSS (which holds and handles geographical data that can be used to forecast the possible outcomes of decisions).

The second category comprises model-driven DSS, including systems that use accounting and financial models, representational models, and optimization models. These decision support systems typically offer fewer data than other DSS types. However, they analyze scenarios and allow users to manipulate a model, such as creating a work schedule.

Next, knowledge-driven DSS suggest or recommend actions to managers. They use business rules and knowledge bases. These DSS are person-computer systems with specialized problem-solving expertise. The expertise consists of knowledge about a particular domain, understanding of problems within this domain, and skills for solving some of these problems (Power, 2002, p. 13).

Another type of DSS is document-driven, which helps managers collect, retrieve, classify and manage unstructured documents, including web pages. Software examples

of document-driven DSS include: search engines, database search software, article databases with search functions.

Furthermore, communications-driven DSS emphasizes collaboration and shared decision-making support (e.g., bulletin boards, email thread, chat and instant messaging services). This type of DSS allows multiple people to work on one project; it improves team's effectiveness and helps to facilitate meetings and conversations (offline, virtual, hybrid). Communications-driven DSS belong to group DSS with multi-user interfaces, shared information space, open environment, and simultaneous control.

Recent studies concern the considerable progress made by Artificial Intelligence (Gupta et al., 2006, p. 8). Thus, a new type of DSS appeared – intelligent DSS, which do data mining and processing to filter through large datasets. They are designed to offer similar services to a human consultant. Intelligent DSS are programmed to identify patterns and trends in order to guide a decision-making process. They can also resolve problems and analyze solutions. AI components add a number of advantages, such as fuzzy logic (i.e., a system of theories used in mathematics and computing to deal with statements that are neither true nor false) and machine learning (the process of computers changing the way they carry out tasks by learning from new data, without a human being needing to give instructions in the form of a program). Software examples of intelligent DSS include smart manufacturing systems and medical diagnostic systems.

In contrast to computerized DSS, manual DSS also rely on experts instead of programs to support decision-making (Jao, 2011, p. 74). A group of professionals conducts a SWOT analysis and identifies strengths, weaknesses, opportunities and threats of their organization or project. A manual DSS is much slower than a computer-based DSS, but certain types of analysis still need a human eye at every step. Besides, human intelligence uses a mixture of cognitive procedures, whereas AI only copies human behavior and uses already existing patterns, as a result it cannot think creatively or suggest non-standard solutions. What is more, people are much better at social interaction. Economists, executives and managers might use a manual DSS which performs cost-benefit analyses and decision matrixes.

The most common DSS currently in use are hybrid systems driven by more than one major DSS component (data, model, knowledge, etc.). They combine parts of multiple DSS types to create a complex outcome (Power, 2002, p. 12). Significant issues in industries such as finance and health care might require the tools of multiple decision support systems and the use of additional software to help these components work together. In addition, a specialist can analyze and combine each DSS's results. Medical professionals, financial decision-makers and researchers use a hybrid DSS in the fields of clinical researches and risk assessments.

Moreover, Daniel J. Power (2002) classifies DSS by user groups – intra-organizational (within the organization) and inter-organizational (occurring between the organizations or involving two or more businesses and associations). From another perspective, DSS can be categorized in terms of the purpose: general and function-specific (help to accomplish a narrow decision task). Finally, all of the above types of DSS can be implemented using Web or Internet technologies. The overall classification of DSS can be introduced by means of the fishbone diagram (fig. 1.7).

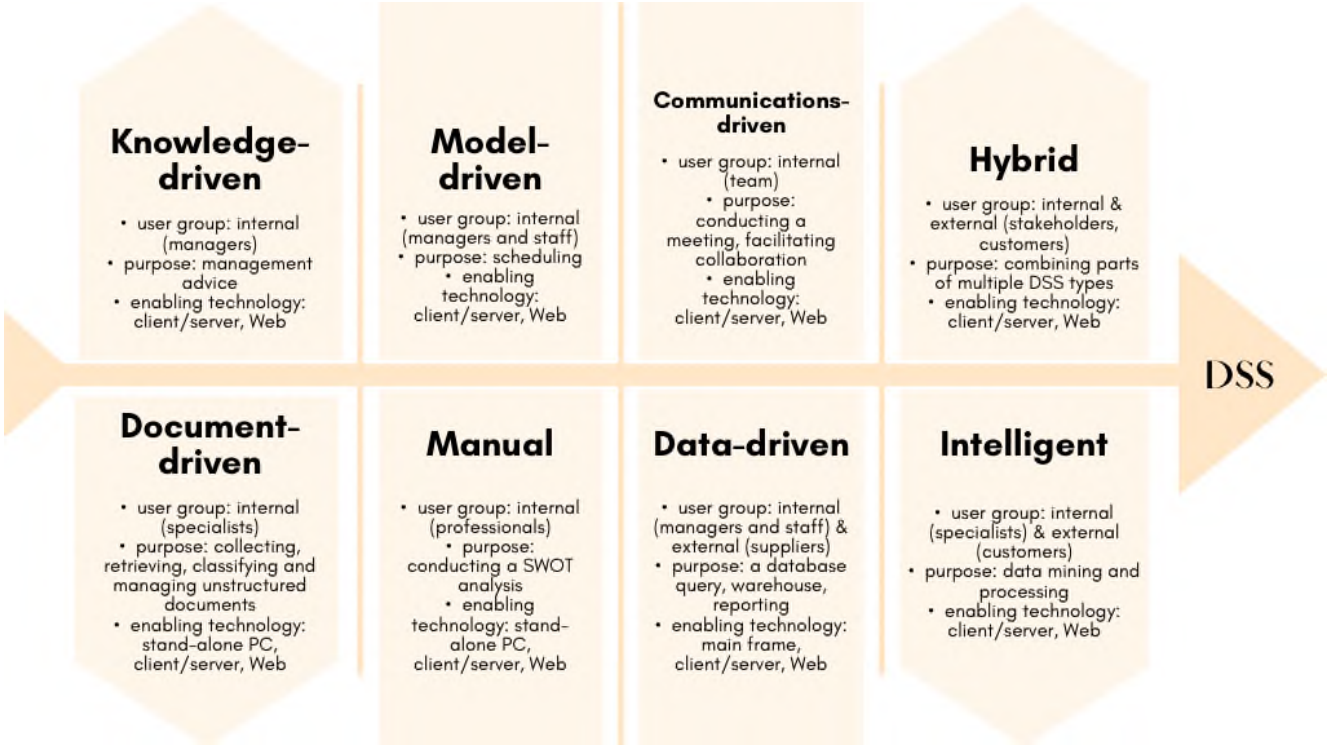

Figure 1.7. Classification of Decision Support Systems

Source: Compiled by the Author

Managers in various fields apply enterprise resource planning dashboards to predict performance indicators; doctors and medical researchers use clinical decision support systems to help diagnose and plan treatment for patients; logistics providers apply GPS (Global Positioning System) to analyze route information and traffic data; farmers with the help of crop planning know the best time to plant, fertilize and harvest crops. Hence, businesses in all industries can benefit from implementing DSS software. Nonprofit organizations are not an exception: the process of fundraising is complex and requires a model in order to optimize the procedures.

Moreover, technologies help set up a secure and reliable collaboration platform with effective communication channels. Decision-making is a time-consuming process, which is why it is preferable to eliminate repetitive tasks to focus on more important issues. Automation tools assist in streamlining and increasing efficiency. For example, real-time feedback channels on the communication platform can help make better decisions based on stakeholders' opinions (through surveys and questionnaires) and customer reviews.

With the help of technology, it is possible to build a culture of transparency and trust within any organization by means of sharing important information with team members, stakeholders, suppliers, and clients in real-time. In addition, virtual reality can be implemented to visualize potential outcomes of decisions, consider different scenarios, examine specific problems and issues, and develop product life cycles. For instance, VR is widely used in safety training when employees need to deal with emergency situations to reduce the probability of committing mistakes in the real world.

It should be stated that decision support systems assess large amounts of current and historical data, identify patterns, support executives, managers, and staff in business decision-making, analyze the effects of such decisions, reduce uncertainty, save time, and help to oversee future trends.

CHAPTER 2.

CASE STUDY OF "ST. PANTELEIMON CHARITABLE FOUNDATION TO HELP SICK PEOPLE" IN THE SCOPE OF STRATEGIC MANAGEMENT

2.1. Analysis of the features peculiar to a nonprofit organization

Recently, nonprofit organizations have become major actors within certain segments of the third sector of the economy (Arcangeli et al., 2017, p. 81), meaning that they are crucial to maintaining the welfare state (i.e., healthcare, education, social work, etc.).

These days, the role of charitable funds has become even more significant than before. They not only identify community problems, such as poverty, widespread diseases, illiteracy, unemployment, discrimination, etc., but also find solutions to achieve social objectives. An essential aim of public organizations is the same: they also serve the country's citizens. However, public entities are owned and managed by the state (either central or local authorities) and receive money from the sources of public revenue, such as taxes, fees, fines and penalties, and grants. Compared with public institutions, non-governmental organizations (NGOs) depend on donations and are not controlled by the government. Moreover, they are more flexible and adjust to challenges more effectively.

It is worth mentioning that the organization of work in nonprofit companies is similar to other business entities. On the one hand, they also conduct commercial activities, submit financial reports, and carry out procurement procedures. On the other hand, the main goal of any business is to get maximum benefits with less input and, as a result, gain a competitive advantage over other rival companies. Although NGOs also deliver services and products to their beneficiaries, their mission is to provide public benefits regardless of their own profit. This objective demands a particular strategic plan, which can set the company's direction, focus efforts, and efficiently use business resources. A wise decision-making process can design the roadmap to resolve all complicated issues and improve performance.

Unlike usual commercial entities, nonprofit organizations are business structures with different values, functions, governance, and tax implications. What is more, they

make their financial and operating information public so that the donors can check how their funds are used. The comparison of NGOs, and public and private organizations is illustrated by means of the Venn diagram (fig. 2.1).

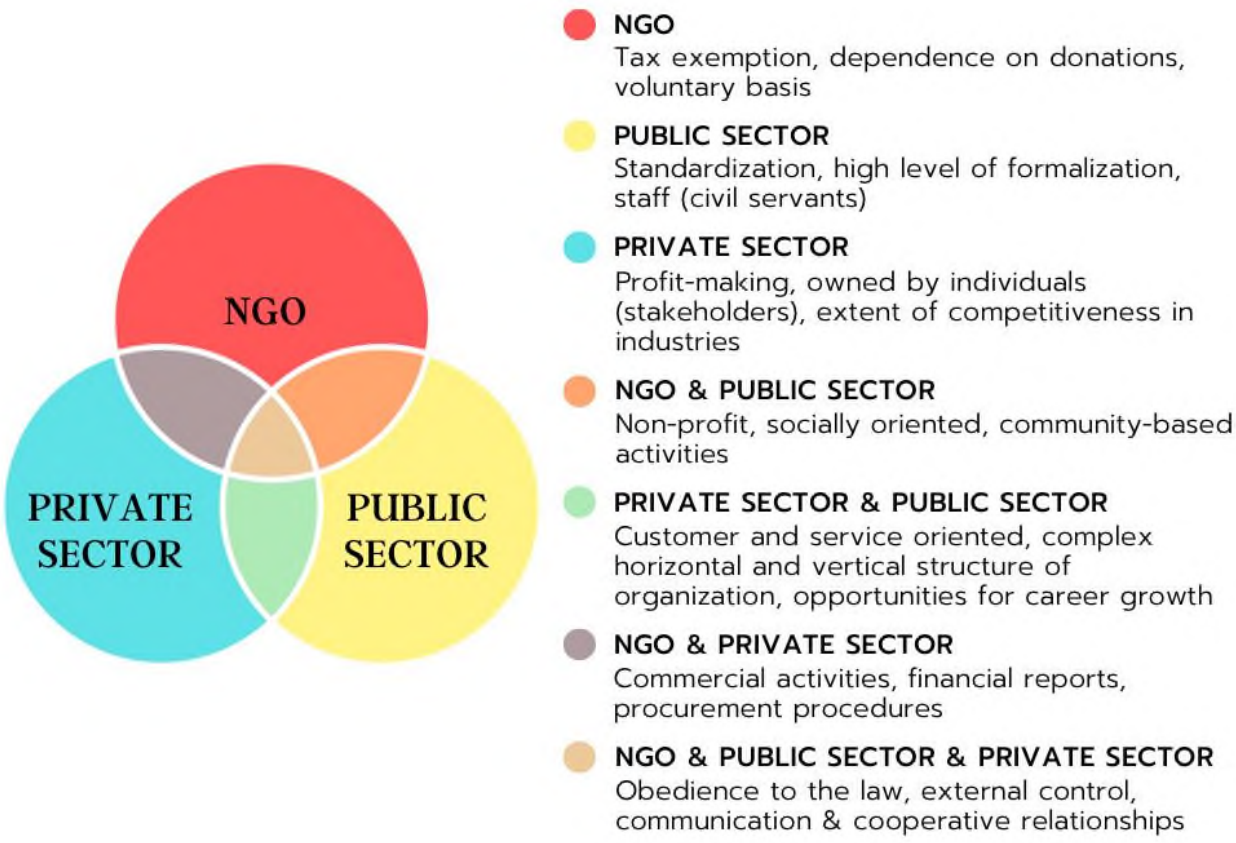

Figure 2.1. NGOs vs. Public Sector vs. Private Sector

Source: Compiled by the Author

Overall, all organizations set their short-term and long-term objectives, focus efforts, and apply strategic management to achieve goals and improve performance (Amagoh, 2015, pp. 226-228). Effective decision-making can bring any organization closer to the target and resolve all problematic issues. Furthermore, it establishes the foundation of any business. However, NGOs are neither part of the market nor government entities. Therefore, some approaches which are suitable in a marketplace cannot be implemented by nonprofit organizations. They are forced not only to plan and structure their work carefully but also to build their decision-making process in order to maintain and convey the image of a trustworthy partner.

How NGOs develop their activities involves several peculiar features. The target of these organizations concerns more how they conduct their work than how much work they accomplish. A fundamental part of the commitment to any charitable foundation is affected by personal ideological motivation. It means that members of the organization should accept the peculiarities of this type of institution:

- a strong dependence on donors and volunteers;
- the existence of external control structures;
- few professional employees whose salary is relatively lower than at the market level;
- a set of implied standards of ethics, internal policies, and codes of conduct;
- the complexity of communication policy arises from a diverse network of relationships with partners and donors.

It is hard work to build a successful, high-performing charitable foundation. In order to sustain, nonprofits should remain agile, resilient, and relevant. An intelligent organization must adjust to various unforeseen circumstances and not rely on one funding source. That is why it is necessary to develop communication with donors and other organizations, as well as accumulate and diversify own funds, such as international grants, individual donations, and corporate sponsorship.

Strong commitment, decisive leadership, and financial stability are key characteristics which can make an NGO an influential company. Recently, there is an increase in the number of NGOs and the level of responsibilities they take. Hence, nonprofits have become promotors of community progress. The following table points out strengths, weaknesses, opportunities, and threats of NGOs as distinctive contributors to the process of social development, as shown by the example of "St. Panteleimon Charitable Foundation to help sick people" (table 2.1).

Table 2.1. SWOT Analysis of the NGO

STRENGTHS	WEAKNESSES
- high level of dedication and decision-making based on moral rules - independent assessment of issues and problems, quick responsiveness to them - cost-effective project implementation and flexibility of conduct - mobilization of human and financial resources - established partnerships and networks with other organizations and government agencies	- restricted financial resources and funding dependence on grants, donations - lack of visibility and awareness of the organization and its programs (for local NGOs) - obstacles in the field of technology to support some operations - limited capacity to implement programs / services on a large scale - dependence on a small group of individuals for decision-making and management
OPPORTUNITIES	**THREATS**
- collaboration and partnerships with international organizations and government agencies - expansion of programs and services to new geographical locations - easy access to implementing new technologies and innovations to enhance operations - increasing demand for services and programs that the organization offers - social media and digital marketing as powerful tools for raising awareness	- competition from other organizations offering similar services / programs - changes in government policies and regulations that impact funding and operations - economic downturns that affect funding and support from donors and supporters - changes in societal priorities that reduce support for the organization's mission - natural disasters or other emergencies that disrupt operations and impact the community

Source: Compiled by the Author

The comparative strengths of NGOs enable them to address the most important issues and social concerns, maintain close ties with a community and other organizations, adjust to challenges, and react quickly to new circumstances and needs. NGOs also

contribute to the long-term viability and sustainability of different projects by promoting open and transparent rules and procedures for public participation. Despite their strengths, charitable foundations face problems that can undermine their contributions. However, effective decision-making strategies can be applied to overcome obstacles, and enhance the performance and competitiveness of the organization in the current unstable environment. Although making strategic decisions requires detailed examination and consideration, NGOs, as opposed to public and private entities, are free to choose specific approaches and courses of action.

2.2. Research of the state of affairs and challenges faced by the company in the framework of making decisions

"St. Panteleimon Charitable Foundation to help sick people" is recognized as a nonprofit organization based on the decision in the Register of nonprofit organizations from 14.09.2018, decision number 1826514600255. In coordination with United Nations Children's Fund, it supports women of reproductive age and pregnant women by providing essential humanitarian aid, i.e., consumable goods, necessary disposable materials, and medical equipment for hospitals. Furthermore, women and children from the occupied territories, internally displaced persons, and those in need can receive free psychological support from mental health professionals.

The characteristics of the entity are the following:

- it has not been created to gain personal profit;
- the participation in the organization is voluntary;
- it is accountable only to its members, donors, and stakeholders;
- it is independent of the government and other public authorities, political parties, or commercial organizations.

The features mentioned above are crucial to the company's operations because they prove its high reputation and help earn public trust. As a rule, NGOs are not required to conduct an independent audit. However, an official examination of the entity is made depending on the funding source. In this situation, outside of the organization, an auditing

firm examines the company's financial statements, records, transactions, accounting practices, and internal reports. As a grant organization, UNICEF insists on proving the implementing partner's financial responsibility before providing funding.

UNICEF audited "St. Panteleimon Charitable Foundation to help sick people" on June 13th, 2022. The objective was to assess the adequacy and effectiveness of governance, risk management, and internal control processes over a selection of significant risk areas of the foundation, including choice of partners, sources of financial funding, approach to cash transfers, end-user monitoring, the delegation of power, staff responsibilities, as well as planning and decision-making processes.

The audit was focused on the key risks of working with the company, including the risks that the outputs and activities of the charitable foundation may not significantly contribute to the achievement of UNICEF's strategic goals; or that goods and services may not be delivered at the right cost, time, and desired quality. It included a review of seven subject areas, listed in the micro-assessment questionnaire (see Annex 1).

The assessment of the implementing partner's program, financial operations, management policies, procedures, systems, and internal controls were rated as those with high, significant, moderate, or low risks. These measurements indicated the likelihood of a potential negative impact on the company's ability to execute the program following the work plan and stated objectives. For each subject area, the risk points were totaled and divided by the number of indicators. The method of calculation is a weighted average, where fundamental questions have double the weight of non-key questions.

The overall risk of "St. Panteleimon Charitable Foundation to help sick people" was low, indicating a well-developed financial management system and functioning control framework. Based on the data analysis, the foundation was selected as a trustworthy partner to implement humanitarian interventions. The audit results are outlined in the table below (table 2.2).

Table 2.2. Audit Results

Subject Area	Points	Risk Rating
The company's legal status, governance structures, and financial viability	16	Low
Program management	19	Moderate
Organizational structure and staffing	15	Low
Accounting policies and procedures	62	Moderate
Fixed assets and inventory	1	Low
Financial reporting and monitoring	25	Moderate
Procurement and contract administration	22	Low
Overall	**160**	**Low**

Source: Compiled by the Author

Thus, the audit proved that "St. Panteleimon Charitable Foundation to help sick people" is an independent, influential actor that brings bold approaches to key issues. The organization was recognized as a responsible partner and a Program Cooperative Agreement was signed between the foundation and UNICEF.

The specialization of the entity is a charity in the fields of healthcare and social protection. Dominant types of business operations include:

- free provision of hygiene items, medical equipment, services,
- fulfillment of contracts and agreements on charitable activities,
- arrangements for transportation,
- public gathering of donations.

It is worth noting that since the beginning of the full-scale invasion of Ukraine, the mission of the organization has undertaken some significant changes from cooperation with the Institute of Traumatology and Orthopedics by National Academy of Medical Sciences of Ukraine to supporting women and children from the occupied territories by offering them free medical services. Moreover, due to the strike of the COVID-19

pandemic, the organization actually suspended its activities for the period from February 2020 to February 2022.

Based on the audit results, UNICEF provided "St. Panteleimon Charitable Foundation to help sick people" with a financial intervention of 4,747,000 UAH. This UNICEF 's contribution made almost 96% of total income of the company for the year 2022. The bar chart below (fig. 2.2) represents data of annual financial statements prepared for the last four years. It confirms that current operating budget of the organization is twice bigger than during the first year of its work.

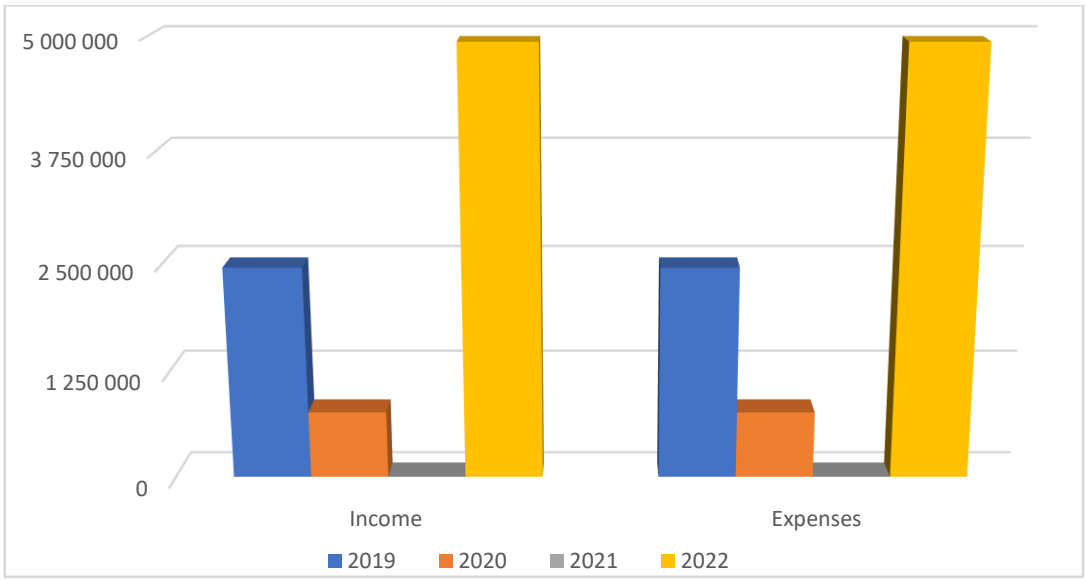

Figure 2.2. Annual Financial Statements

Source: Compiled by the Author

According to the Law of Ukraine, the foundation carries out its activities "About charity and charitable organizations" (2012). In addition, there are a number of normative documents and instructions which determine the foundation's work. These are internal policies of ethics and codes of conduct. Furthermore, the Prevention of Sexual Exploitation and Abuse (PSEA) standards are mandatory for all implementing partners of the United Nations Children's Fund, including staff, consultants, individual contractors, stand-by personnel, volunteers, interns and other persons who work for the UN under an individual contract. In the framework of strategic management, it means that these laws and policies regulate the choice of decision-making approaches.

Another factor, which has an important impact on the process of making decisions, concerns management of the company. The governing bodies of "St. Panteleimon Charitable Foundation to help sick people" are the general meeting of the participants and the executive authority represented by the chairman of the foundation. The following chart describes the organizational structure of the entity (fig. 2.3).

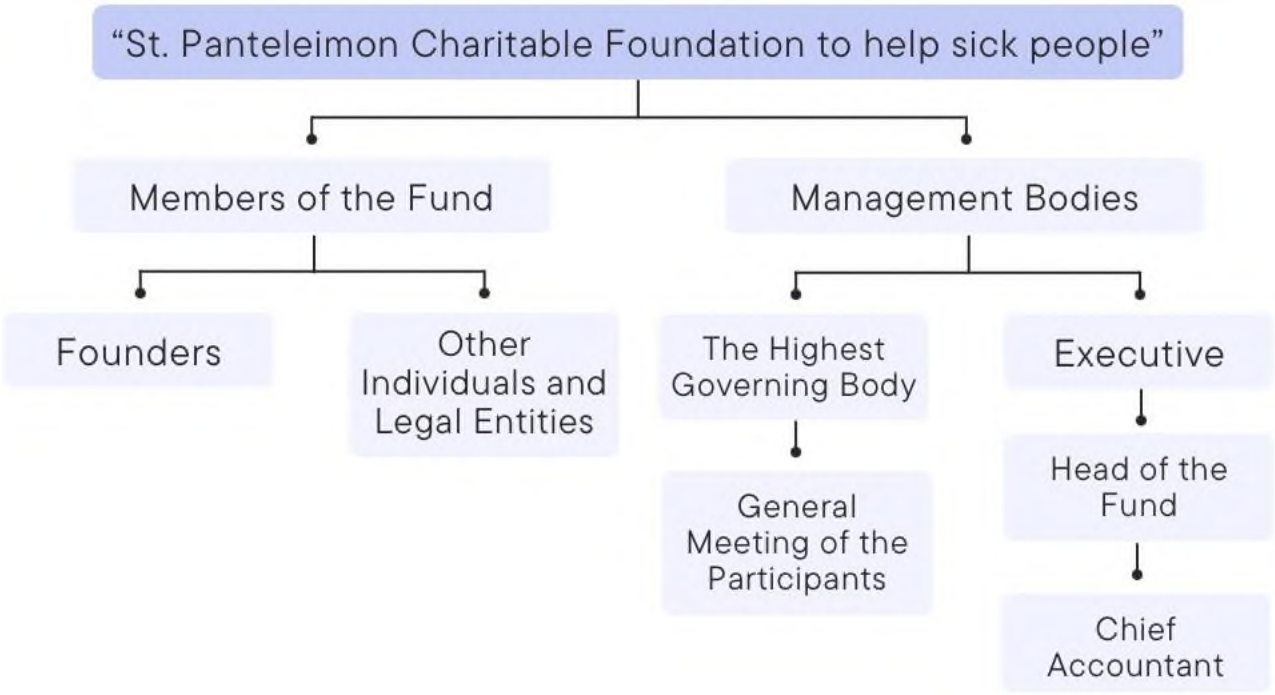

Figure 2.3. Organizational Structure of the Company

Source: Compiled by the Author

The executive body of the charitable organization consists of a single individual who has a full capacity and, consequently, is responsible for making strategic decisions. Considering that fewer than ten members are in the company, it is not necessary to create a supervisory board. "St. Panteleimon Charitable Foundation to help sick people" has no separate departments, there are only two key employees whose job descriptions are clearly defined and appropriate for the complexity of the company and the scale of its activities. Apart from the foundation's chairman and the chief accountant, volunteers carry out community services and conduct activities in coordination with the foundation's personnel.

In the scope of decision-making, the foundation faces a variety of challenges. First, the NGO operates on limited budgets and resources. Thus, the company needs to prioritize its own programs to meet society's demands. "St. Panteleimon Charitable Foundation to help sick people" is currently implementing a joint project with UNICEF, "Supporting the health of women of childbearing age and pregnant women during the armed conflict in Ukraine". This way, the program targets women of reproductive age and supports improving sexual and reproductive health (SRH).

Second, NGOs do not always have access to complete or accurate information. In order to cope with this challenge, the foundation should build partnerships with other organizations, government agencies, and private sector companies to leverage their expertise and resources. For instance, "St. Panteleimon Charitable Foundation to help sick people" appealed to Poltava Regional Health Administration and, as a result, was provided with regular official statistics on the access to Minimum Initial Service Package (MISP) in UNICEF-supported medical facilities. Such engagement involved local authorities and medical specialists in the decision-making process and helped to prioritize the most urgent issues that needed immediate attention.

Furthermore, many of the problems, which the organization is addressing, are complex and multifaceted. Such complexity can make it difficult to determine the best course of action. To overcome this challenge, it is possible to carry out a research, collect, and analyze data. For example, before implementing a joint project with UNICEF, the study, aimed at identifying barriers to SRH services, was conducted. It revealed many serious issues and helped to arrange them in order of importance. The results of this research are shown in figure 2.4.

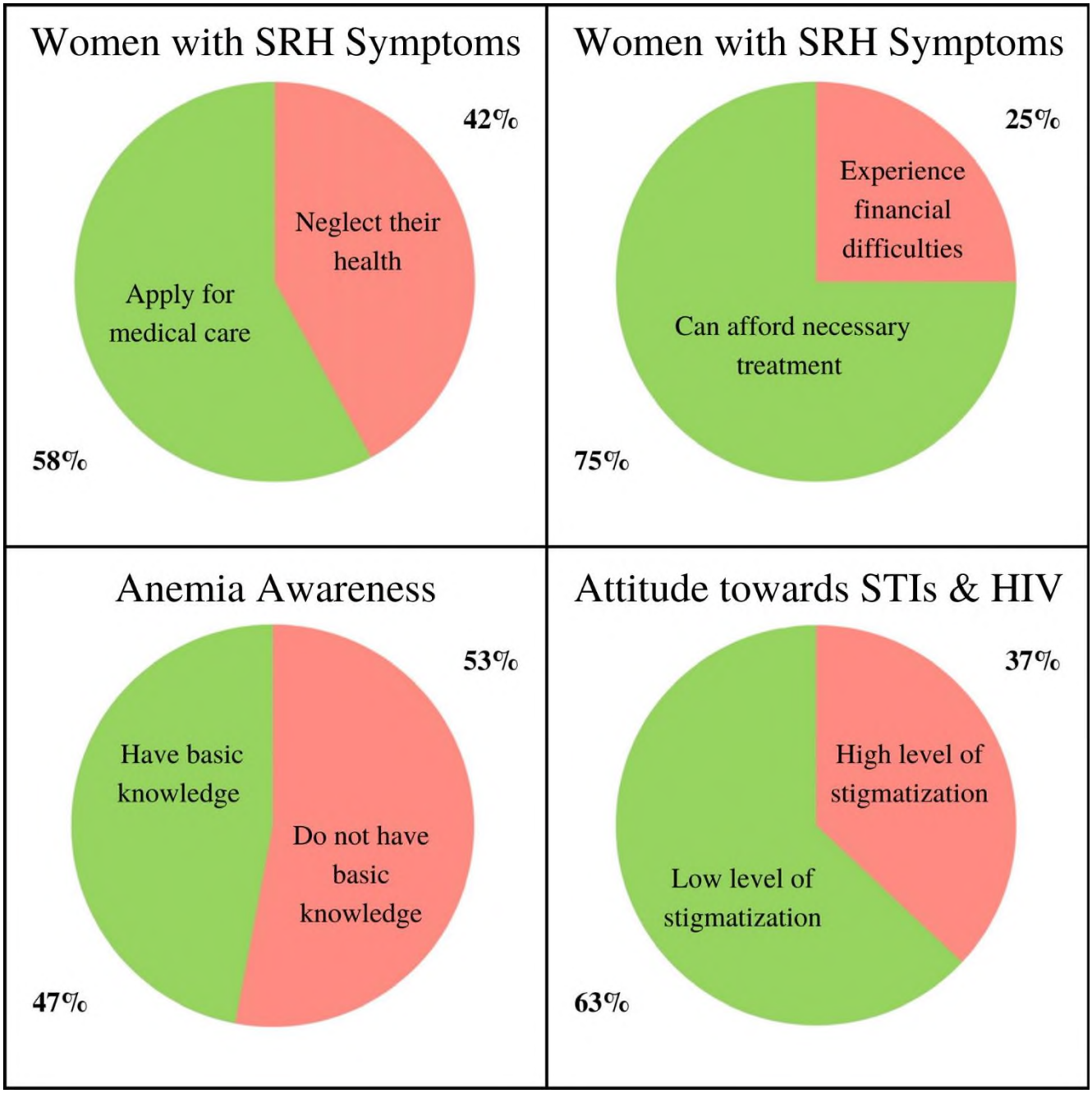

Figure 2.4. Results of the Research on Accessibility to SRH Services

Source: Compiled by the Author

Dependence on the donor's vision can be considered another challenge to be dealt with. Both main program directions of the entity (analytical and procurement) reflect the United Nation's policies and promote their standards. Consequently, the specialization of the company is restricted to the focus areas of UNICEF as the main donor of the foundation.

All things considered, the challenges mentioned above are common for all NGOs. They create barriers in the implementation of various socially important programs and community development. Effective decision-making can be a useful tool to resolve these difficulties. It is necessary to involve collaboration, share experience, hold consultations, run focus groups, lead discussions, etc.

2.3. Assessment of the appropriateness and effectiveness of the current usage of decision-making technologies

There should be a clear allocation of decision-making and accountability between the governing body, the executive (individual in charge of the organization's performance and implementation of decisions), and other foundation members. The factors, which determine such distribution of responsibilities, include a level of strategic oversight, a degree of discretion, and a level of risk.

Regarding "St. Panteleimon Charitable Foundation to help sick people", the governing body has chosen a single-member decision-maker. The foundation's chairman has all necessary skills and is considered appropriate for this role. The executive's work is guided by a set of principles that ensure the effective and ethical operations of the NGO. Some of these principles include:

- transparency (all stakeholders, including beneficiaries, staff, and partners, must be informed about the decision-making process and the rationale behind decisions);

- participation (the executive strives to involve relevant stakeholders in the decision-making process);

- accountability (the executive is accountable to the public, donors, and beneficiaries; and responsible for ensuring that all decisions are aligned with their mission);

- evidence-based practice (NGOs rely on data and research to make informed and well-supported decisions that are grounded in facts);

- ethics (NGOs are committed to ethical principles, such as respecting human rights and avoiding conflicts of interest);

- sustainability (the executive ensures that all actions and decisions are not only effective in the short-term but also contribute to a long-term impact);

- collaboration (it helps to ensure that decisions are made in a holistic manner, taking into account the perspectives and expertise of different partners).

A rational decision-making model is applied in finding suppliers, which is clearly defined in the organization's procurement policy. It is conducted on a competitive basis by comparing similar proposals from the companies which provide goods and services according to pre-approved criteria. The best proposal that complies with the foundation's policy is selected. Conditions, methods, criteria, and procedures for determining the supplier of products or services are set in advance and are the same for all participants.

The ProZorro platform, i.e., a hybrid electronic open-source government e-procurement system, is globally recognized as one of the most innovative, stakeholder-focused, transparent, effective, fair and low-cost way. Moreover, it is a useful tool for implementing rational decision-making. Each step of his process is indicated in the figure below (fig. 2.5).

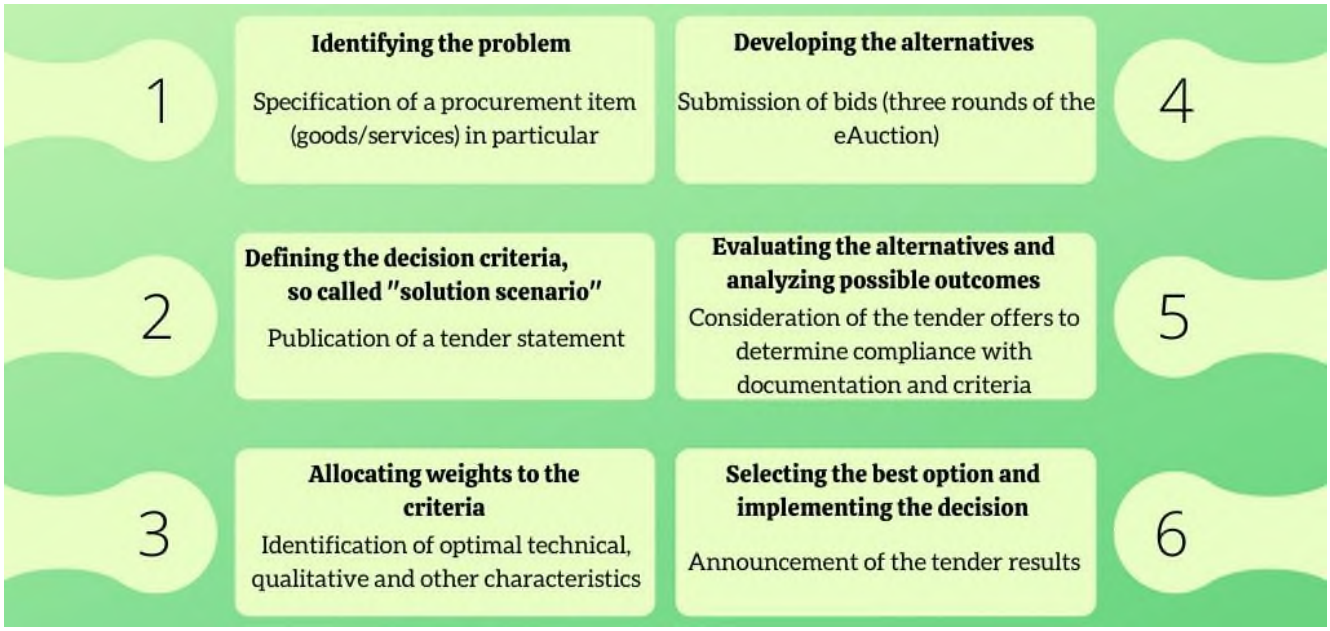

Figure 2.5. Implementation of Rational Decision-Making via ProZorro

Source: Compiled by the Author

"St. Panteleimon Charitable Foundation to help sick people" places advertisements in the local media, state, and private web portals, and on its own website. Copies of the tender announcement are also sent by email to at least three potential suppliers. The terms of reference, which are made public during the tender announcement, do not change after publication. Upon receipt of the proposal from the supplier, a reconciliation is made with the specification of the terms of reference, which was published in the tender.

The announcement includes:

- description and quantity of the required goods;
- estimated time and place of delivery;
- address and expiry date for submission of bits.

When inspecting suppliers, the foundation uses the public analytics module bi.prozorro.org, where the checked information about suppliers can be viewed from different registers. Open data bot platform and the UControl counter-party verification service are also used. The organization finds goods and services on the websites of the checked companies, systematizes the received information and then uses it for drawing up orders with optimum prices for the goods and services needed.

A brief description of the procurement process is specified in the minutes of the meeting of the tender committee. The agenda consists of the following steps:

1) making statements by members of the tender committee regarding the absence of the conflict of interest during the consideration of tender proposals;
2) determination of evaluation criteria for tender offers;
3) identification of candidates;
4) consideration of the tender offers and determination of the tender results.

The chairman of the foundation controls a procurement procedure and fulfilment of the terms of concluded agreements. The decision to sign contracts as well the permission to purchase goods is made exclusively by the CEO. Procurement reports are generated regularly. As assured by management and at the request of the donor (UNICEF), reports are compiled and submitted for review on a weekly basis.

According to the amendments to the Law on Public Procurement, purchases worth from 50,000 UAH to 200,000 UAH are carried out under a simplified procedure, the main

feature of which is the reduced purchase term. If the value of goods/services is less than 50,000 UAH, procurement is conducted without a tender announcement. Consequently, the chairman of the foundation chooses a model of bounded rationality while making decisions, meaning that solutions are accepted within the limits of a simple framework.

"St. Panteleimon Charitable Foundation to help sick people" is an example of the company that continues its work regardless current difficulties. As a result of a full-scale Russian invasion, the humanitarian situation of the population in Ukraine has reached catastrophic proportions. The foundation in general, and its management in particular, should be more flexible and adjust to challenges more efficiently. Time optimization is extremely important in the context of operational effectiveness of the organization. There is always a need for a time buffer, especially in case of unforeseen circumstances. Lack of time buffer can negatively influence the chain supply and, in turn, prolong the time of operations. Thus, the CEO implements intuitive decision-making while looking for the vulnerable categories to diversify funds and speed up the process.

For example, the organization purchased necessary medical equipment (eight fetal cardiological monitors) for the end beneficiary (Poltava Regional Perinatal Centre) on the basis of the public procurement of goods from June 30th, 2022. On the grounds of tender results, trade agreements with Empirica LTD were concluded. Transportation was the next stage in the logistics process. Taking into account unexpected conditions related to arrangements for delivery, decisions were made intuitively. Such model was chosen in order to act quickly and achieve higher performance.

The logistics process begins with planning. Once the required items have been identified, the NGO needs to procure them on the basis of an open-source government e-procurement ProZorro system. Next, the company should make arrangements for transportation and storage. Afterwards, the goods should be delivered to the right place at the right time. As soon as the equipment has been delivered, it has to be installed and maintained. Finally, the NGO needs to monitor and evaluate the decision-making process to ensure its effectiveness. Overall, stages of the logistics are specified in the table below (table 2.3).

Table 2.3. Decision-Making Process in Logistics

Stages	Course of Action
1. Planning	• assessing the needs of the community • analyzing data on the local health infrastructure • identifying gaps • determining what medical equipment is required
2. Procurement	• announcing & holding a tender • identifying suppliers • negotiating contracts • ensuring that the equipment meets the required quality standards and will be delivered on time
3. Transportation	• arranging for delivery • handling customs clearance (in case of shipping) • managing any logistics-related paperwork • transporting the equipment from the supplier to a warehouse or distribution center
4. Storage	• ensuring that the equipment is stored in appropriate conditions, such as temperature-controlled warehouses or secure storage facilities • managing inventory levels to ensure that the NGO has the right number of items across its entire logistics network
5. Distribution	• planning the distribution routes • arranging for loading & unloading • coordinating with local health authorities
6. Installation and Maintenance	• providing training to medical workers on how to use the equipment • arranging for maintenance and repairing if needed
7. Monitoring and Evaluation	• tracking the distribution of equipment • assessing the impact of the provided goods on the local health infrastructure • making improvements to the logistics process

Source: Compiled by the Author

Decision-making is a structured, multi-step process that cannot be conducted by choosing only one model. Therefore, the chairman of "St. Panteleimon Charitable Foundation to help sick people" generates ideas using various approaches, i.e., rational, intuitive, bounded rationality. It is worth noting that these models are not implemented separately. Instead, they are used in a combination, complementing each other. It should be also stated that a creative decision-making model is not implemented by the company on a regular basis. It can be explained by the fact that this approach involves many hours of brainstorming and experimenting in order to reach the best solution. Currently, the company cannot afford it due to a lack of necessary resources (time, staff, finances).

Furthermore, modern technologies, especially introduction of decision support systems, offer many benefits for NGOs. Although "St. Panteleimon Charitable Foundation to help sick people" does not use such tools to the fullest extent, some of them are implemented in order to improve the efficiency of decision-making. For instance, the foundation uses online surveys to collect and analyze data related to their projects. This information helps to make data-driven decisions, reach wider audiences, and measure the impact of implemented programs. In addition, there is a number of software applications (video conferencing, instant messaging, online training programs) which help the organization to communicate and collaborate with donors and suppliers. However, the company does not have any active profiles on social media platforms and, as a result, cannot use this powerful community-building tool for recruiting potential volunteers, mentors, engaging new donors.

All things considered, technological solutions can be of immense help in the context of making decisions. In the next chapter we will prove that the implementation of Artificial Intelligence and other IT tools can improve the ability of analyzing massive amounts of data, providing recommendation based on this analysis, and, therefore, making more informed, accurate, and effective decisions.

CHAPTER 3.

IMPLEMENTATION OF MIXED DECISION-MAKING TECHNIQUES IN A MANAGEMENT MODEL OF THE ORGANIZATION

3.1. Comprehensive evaluation of identifying problems and finding solutions in the international practice

Decision-making is a critical aspect of business operations, as it impacts the success or failure of a company. In today's rapidly changing business environment, companies are faced with numerous challenges that can have an influence on their ability to make effective decisions. Some of these problems include:

- limited resources (financial and human),
- time constraints,
- personal biases, interpersonal conflicts,
- uncertainty regarding external factors,
- public pressure,
- rapidly changing environments.

Effective decision-making tools can help organizations find better solutions, improve a managerial process, and increase revenues. International practice gives us examples of strategies, which can be grouped into three categories:

1) Strategic Analysis Tools (used to analyze the external environment and internal capabilities of an organization, identify strategic options, and prioritize actions);
2) Data Analysis Tools (involve gathering and analyzing data to support decision-making, often based on quantitative or numerical inputs);
3) Creative Problem-Solving Tools (designed to generate innovative solutions by exploring different perspectives and approaches to a problem).

It should be also noted that different tools can be used for different purposes depending on the context. General classification of decision-making techniques is present in the figure below (fig. 3.1).

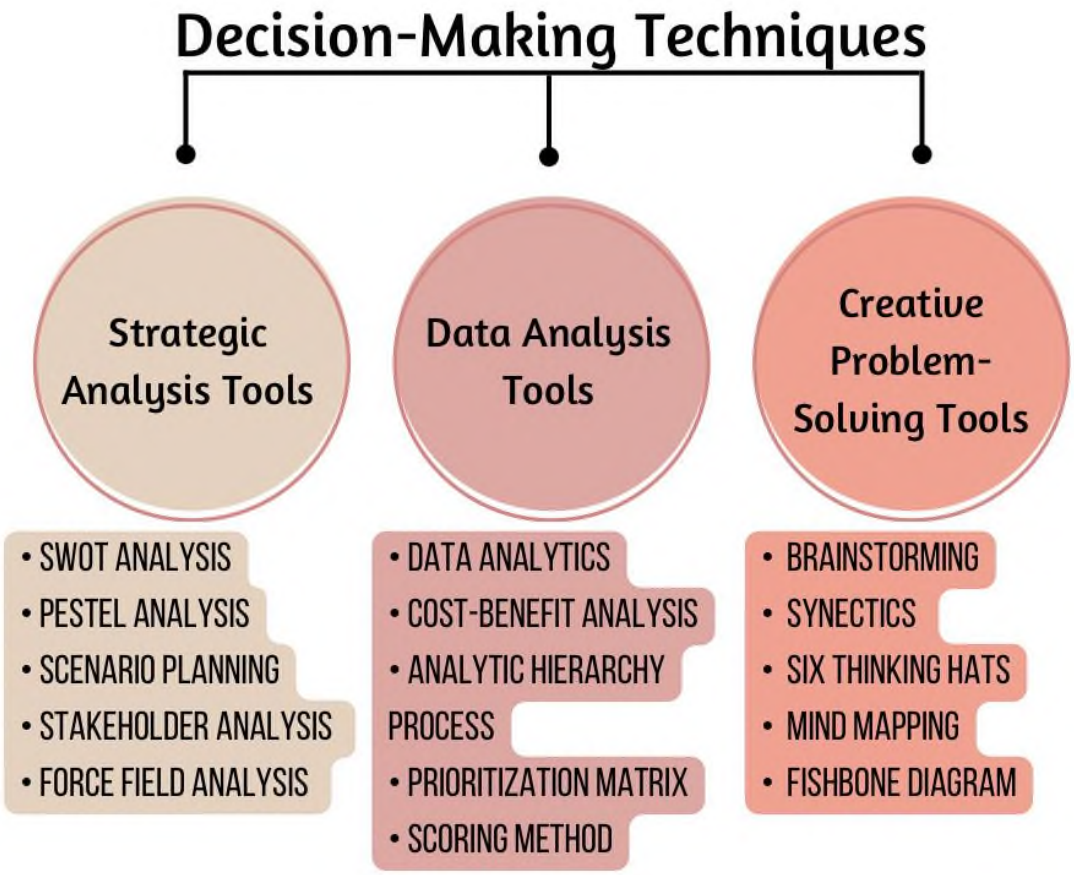

Figure 3.1. Classification of Decision-Making Techniques

Source: Compiled by the Author

Strategic analysis tools are valuable decision-making technique that can help companies identify potential risks, assess opportunities, and prepare for possible outcomes. They are often implemented in the international practice due to their effectiveness in evaluating the internal and external factors that can influence an organization's success. For instance, in 2019, the Chinese electronics company Huawei conducted both SWOT and PESTEL analyses to assess the impact of the US trade ban on their business. The analysis helped them identify key strengths to leverage and weaknesses to address, such as diversifying their product portfolio and improving their relationship with key suppliers.

Scenario planning is another commonly used decision-making technique. This tool is implemented to identify potential future scenarios and their impacts on an organization. It is a way to prepare for risks and mitigate them by exploring different scenarios and

their outcome. Moreover, scenario planning is used to anticipate and get ready for potential crises and emergencies, such as natural disasters, global pandemics, or political instability. For example, Royal Dutch Shell, one of the largest oil and gas companies in the world, implemented scenario planning in 2020 to evaluate potential future scenarios and prepare for the impacts of the Covid-19 pandemic.

Through the scenario planning process, Shell outlined three frameworks (i.e., a rapid recovery plan, medium-term and long-term downturn scenarios) and was able to develop strategies to diminish risks and capitalize on opportunities. Consequently, the company focused on reducing costs and improving efficiency in response to the downturn in demand for oil and gas products. In addition, the corporation invested in renewable sources of energy and electric vehicles charging infrastructure in order to prepare for the transition to a low-carbon future. As a result, Shell reported its highest-ever annual profit of $42.3 billion for the full-year 2022. It surpasses the $30.8 billion earnings in 2011 which Shell said was the company's previous annual record. Besides, the corporation's net income has almost doubled since 2021. The bar chart below represents the company's net income history and growth rate from 2010 to 2022 (fig. 3.2).

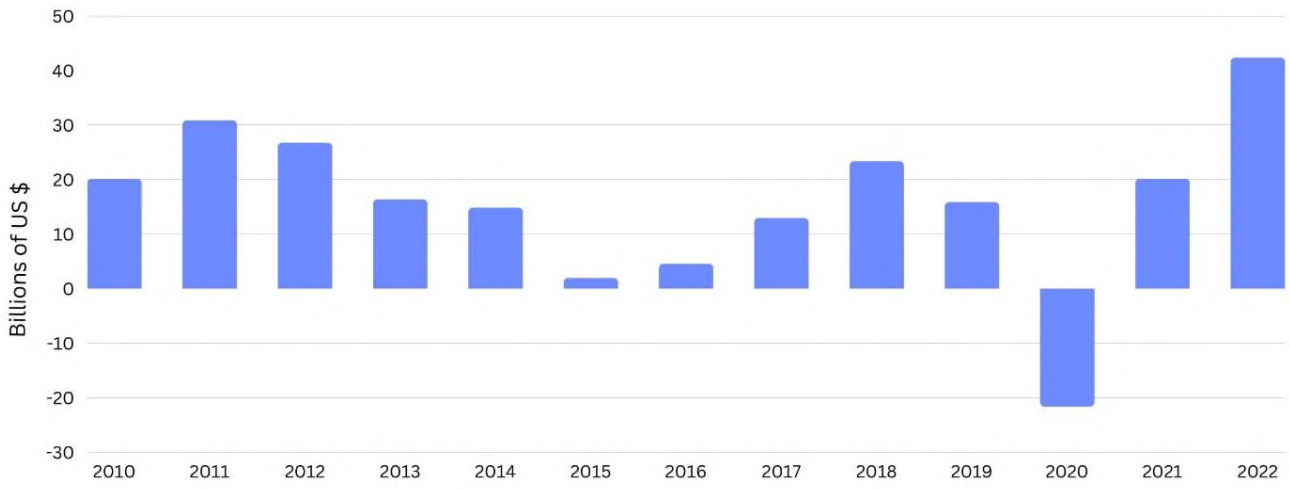

Figure 3.2. Shell's Annual Net Income

Source: Adapted from https://www.macrotrends.net/stocks/charts/SHEL/shell/net-income

Organizations can use data analysis to gather, examine, and structure information in the fields of descriptive (e.g., visualization, BI), predictive (e.g., data mining, time-series forecasting), causal, and prescriptive analytics. These techniques are implemented to estimate values of relevant parameters, and then use optimization and simulation to formulate effective decisions. By using data analytics, organizations can identify opportunities, optimize operations, and gain a competitive advantage.

With the emergence of computer technologies and improvement of storage and processing capabilities, it became possible to collect, store, and analyze vast amounts of data. The 2000s can be referred to the widespread implementation of data analytics in organizations' decision-making processes. Here are some examples of companies that successfully use data analytics software:

- Google optimizes its search engine algorithms, ensuring that users receive the most relevant search results;

- Netflix recommends personalized content to its subscribers, helping to keep them engaged and reduce churn;

- Samsung gathers insights on customers' preferences to update products and develop new features;

- Retail shops and supermarkets (e.g., Walmart, Spar, Watsons, Intertop, H&M Group) improve their supply chain, forecast demand, and make informed decisions about inventory and logistics;

- Uber optimizes its route planning, pricing, traffic patterns, allowing it to provide more efficient and cost-effective services to its customers.

Thus, the implementation of data analytics by using the combination of data collection, data analysis, and data visualization tools helps companies to gain a deep and clear understanding of their users' habits, identify trends, and make informed decisions based on data-driven insights. However, not all companies can afford to use data analytics software due to a lack of expertise, limited finances or a low level of digitalization in the country they operate. Moreover, some organizations may not have a culture that values data-driven decision-making. Such companies may prioritize other investments or rely on traditional decision-making methods.

Regarding creative problem-solving tools, it should be stated that this set of techniques and methods is used to generate innovative and effective solutions to complex programs. They are implemented in various stages of the decision-making process, such as problem identification, idea generation, and solution selection.

Brainstorming is one of the most popular tools used in the international practice. For instance, the European Union's Horizon 2020 Program used brainstorming techniques to support its research and innovation activities through the "Ideas Lab" initiative. The program ran from 2014 to 2020 with a budget of nearly €80 billion and was focused on such areas as health, energy, and climate change. The Ideas Lab brought together researchers, stakeholders, and policymakers who were encouraged to think creatively. The initiative was designed to be an open and collaborative space for generating new ideas, which were then evaluated based on their potential impact and feasibility. The Ideas Lab process involved a series of workshops and brainstorming sessions, which were facilitated by experts in creative problem-solving. The Ideas Lab initiative resulted in several successful projects, including researches on sustainable energy systems, personalized medicine, and urban planning.

One more creative problem-solving technique, which is often used in decision-making processes, is Synectics. It involves combining unrelated or seemingly unrelated elements to generate new perspectives and solutions. Here are some real-life examples of how Synectics has been implemented in decision-making processes:

- Ford Motor Company combined the characteristics of a luxury car with those of a sports car, resulting in a unique and innovative design of the Ford Taurus;

- Procter & Gamble joined the concept of a toothbrush with the concept of a pencil eraser and created the Oral-B CrossAction toothbrush;

- Puma introduced a collaboration with a video game developer Mojang Studios, resulting in an exclusive collection of PUMA x MINECRAFT footwear;

- NASA was inspired by the shape of a bird's wing, combined this element from the field of biology with the principles of aerodynamics and developed more efficient spacecraft designs;

- the LEGO Group developed new product lines by combining the concepts of traditional LEGO bricks with popular franchises, such as Star Wars, Friends TV sitcom, Harry Potter, etc.

Overall, creative problem-solving tools can help approach problems from new angles and, therefore, result in more effective solutions. They stimulate creativity, encourage collaboration, and promote innovation. The idea of these techniques is based on the principle that diverse teams can generate new ideas by combining their experience and expertise, exploring multiple solutions, considering different perspectives. This can lead to the development of new products, services, and processes that can help an organization to remain competitive in a rapidly changing marketplace.

Furthermore, not every decision-making situation is the same, and different techniques are better suited to different types of problems or decisions. By considering a variety of frameworks, mitigating risks, promoting innovation, avoiding bias, and remaining flexible, organizations can make more informed decisions that will minimize the potential negative consequences and lead to better outcomes.

3.2. Consideration of ways of developing the process for making strategic decisions to enhance the efficiency of business operations

In the context of strategic decision-making tools, the most common ones used by NGOs are SWOT and PESTEL analyses, scenario planning, and stakeholder analysis. Regarding the cooperation between "St. Panteleimon Charitable Foundation to help sick people" and UNICEF, a stakeholder analysis can help the organization identify and understand the various stakeholders involved in their operations, and, as a result, develop strategies to seek out additional funding sources, form new partnerships with other organizations, and support effective decision-making.

The stakeholder analysis (see Annex 2) is mainly based on previous studies and reports, experience received during the internship, the information gathered from secondary sources, and personal perception. The first step was to identify main groups of stakeholders (i.e., government, international and local organizations, experts, media,

donors), who showed an interest in the issues with which the project was concerned. The second step was the assessment of the stakeholders' attitude, power, and influence on the process of making decisions. Finally, the results were summarized and described in a separate table.

Attitude (A) refers to the potential reaction of various stakeholders to the project. It shows whether they are supportive towards the project or not and to what extent. The scare ranges from 3 (highly supportive) to -3 (highly negative). Stakeholder power comprises human (H), financial (F), and political (P) resources available to each stakeholder and their ability to mobilize them. The scale ranges from 5 (very strong) to 1 (very weak). Influence refers to the sum of powers (H+F+P). The way how the total is calculated is seen in Equation (1).

$$\text{Total} = A \times (H + F + P) \quad (1)$$

The need of involvement depends on the total number: if the total number is less than 10, the stakeholder may be disregarded; if the total number is more than 10, the stakeholder can be considered supportive and should be involved. The extent of involvement is shown in the table below (table 3.1).

Table 3.1. The Extent of Stakeholders' Involvement

Total Number	**Degree of Attitude**	**Degree of Power**	**Extent of Involvement**
10 - 20	moderate	low	to be informed
20 - 30	moderate	medium	to be consulted
> 30	high positive	high	to be involved in decision-making

Source: Compiled by the Author

Such stakeholder analysis can be considered a crucial first step in making strategic decisions and participatory planning. It provides a basic understanding of the organizations and people who can influence a decision-making process. This analysis is

needed in order to involve them into the project, facilitate their cooperation, and better implement the particular activities.

A force field analysis is another useful technique that should not be underestimated. It involves identifying and analyzing the factors which contribute to a particular issue, and then developing strategies to increase the driving forces and reduce the restraining forces. This framework is often used in the context of strategic planning, change management, and implementation of new projects.

An NGO specializing in medical equipment can apply a force field analysis to evaluate the balance of forces that can impact the success of a change initiative, for example improving the effectiveness of its medical equipment programs. Each force is rated on a scale of 1 to 5 based on its strength, with 1 having a little impact and 5 having a big impact on the business decision. Then the indicators are added up, and the totals are compared. The figure below represents pros and cons of the program's implementation (fig. 3.3).

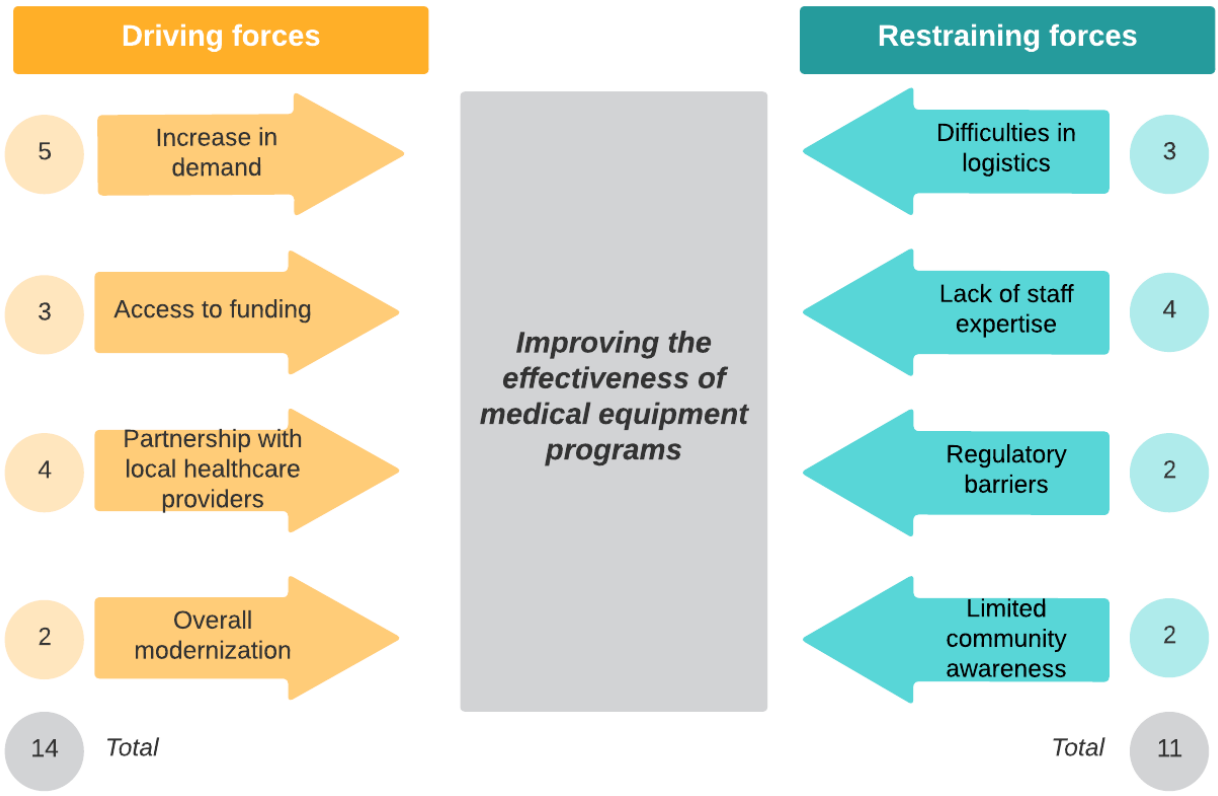

Figure 3.3. The Force Field Analysis of the Project

Source: Compiled by the Author

By using the force field analysis, an NGO can develop strategies to strengthen the driving forces (for instance, seeking out additional funding sources, forming new partnerships with other organizations, ensuring that the program is utilized effectively) and reduce the restraining forces (for example, investing in staff training, exploring new fundraising strategies, raising engagement of the community).

It should be taken into consideration that a force field analysis is useful for strategic decision-making, but it is ineffective in the day-to-day tasks. The advantages of this technique include clear and easy implementation, focus on the most critical issues, facilitation of cooperation between members of the team. However, there exist some limitations, among which the subjective nature of the scoring should be stated. In the matter of this, it is possible to use a cost-benefit analysis to complement a decision-making process.

A cost-benefit analysis is a tool that helps organizations evaluate the potential costs and benefits of different options before making a decision. This involves weighing the potential benefits against the costs and risks to allocate the company's resources and ensure that they maximize their impact on improving the outcomes of the action. "St. Panteleimon Charitable Foundation to help sick people" can use this technique regarding the program aimed at providing fetal monitors to perinatal hospitals.

The first step is to identify and quantify the potential costs and benefits. The average price of one fetal monitor is 75,000 UAH. In addition to the cost of the equipment, we need to consider other potential costs, such as the cost of training staff and the cost of maintenance and repairs. The benefits might be measured in terms of improved health outcomes. To assign monitory values to the benefits, we can estimate the expected cost savings for the hospital based on the improved perinatal care. The use of fetal monitors can help detect potential problems during pregnancy and childbirth, allowing to reduce the likelihood of complications and the risk of morbidity.

According to the 7th chapter of the Normative Legal Act of the Cabinet "State guarantee program for provision of free medical care to the citizens for the year 2023", the cost of neonatal care package is 135,026 UAH for an infant with a very low or extremely low birth weight (<1500 g) and 33,073 UAH for an infant with a low weight

(1500-2500 g). Let us assume that the program can result in a 20% reduction in the likelihood of staying in neonatal intensive care units, additional medical interventions, and hospital readmissions. On average, 1 in 10 pregnancies end in preterm birth. Moreover, according to the statistics provided by the World Health Organization, 12% of all premature cases are very preterm and 5% are extremely preterm births.

The end beneficiaries of the program implemented by "St. Panteleimon Charitable Foundation to help sick people" are Poltava regional clinical hospital and perinatal center. Approximately 7000 children are born in Poltava region every year. Consequently, 700 cases might be preterm cases, among which 35 babies (extreme cases) are supposed to require neonatal intensive care and 84 babies (standard cases) are supposed to require additional care.

The expected cost savings may be calculated as it is seen in Equation (2).

$$CS = \frac{(C_1 * N_1) * r}{100} + \frac{(C_2 * N_2) * r}{100} \quad (2)$$

Where, CS – cost savings,

C_1 *– cost per extreme case,*

N_1 *– number of extreme cases,*

C_2 *– cost per standard case,*

N_2 *– number of standard cases,*

r – reduction percentage

To estimate the potential benefits, we need to apply the formula stated above: $1\ 500\ 808 = \frac{(135\ 026 * 35) * 20}{100} + \frac{(33\ \ 073 * 84) * 20}{100}$. Then, this sum can be rounded and equally divided between all three categories of the program's benefits (i.e., improved perinatal care, reduced complications and morbidity, additional medical interventions).

Based on these assumptions, the program's benefits exceed its costs, and the project can be considered financially viable. By subtracting the total costs from the total benefits, we can calculate the net benefit of the program, which, in this case, is 500,000 UAH and indicated in the table below (table 3.2).

Table 3.2. Potential Costs and Benefits of the Program

Category	Cost	Benefit
Fetal monitors (10 pcs)	750,000 UAH	
Training staff	70,000 UAH	
Maintenance and Repairs	180,000 UAH	
Total Costs	**1,000,000 UAH**	
Improved Perinatal Care		500,000 UAH
Reduced Complications and Morbidity		500,000 UAH
Additional Medical Interventions		500,000 UAH
Total Benefits		**1,500,000 UAH**
Net Benefit		**500,000 UAH**

Source: Compiled by the Author

The next step of the cost-benefit analysis is to set a time frame for the program. We can assume that the program will run for 3 years. The scope of the analysis makes it possible to calculate the net present value (NPV), which, in turn, allows to represent a benefit-cost ratio in a more dynamic way.

The NPV formula is used to determine the value of an investment or project by comparing the present value of its expected cash inflows and outflows. It takes into account the time value of money, which means that the money received or paid out in the future is worth less than the same amount of money received or paid out today, due to the factor of inflation. Thus, it is necessary to apply a discount rate, which, in our case, can be assumed as 10%. The formula for NPV is represented in Equation (3).

$$NPV = \left(\frac{CF_1}{1+r} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3}\right) - X_0 \quad (3)$$

Where, $CF_{1/2/3}$ – cash flows in time 1/2/3,

r – discount rate,

X_0 - cash flow in time 0

To calculate the NPV, we sum up the present values of the net cash flows for each year and subtract the initial investment from the total present value. The results of these calculations are shown in table 3.3.

Table 3.3. The Cost-Benefit Analysis of the Project

Year	Cost	Benefit	Net Cash Flow	Discount Factor (10%)	Present Value
0	1000000	0	-1000000	1	-1000000
1	1000000	1500000	500000	0,909	454545
2	1000000	1500000	500000	0,826	413223
3	1000000	1500000	500000	0,751	375643
Total	**3000000**	**4500000**	**1500000**		**243410**

Source: Compiled by the Author

The positive NPV of 243,410 UAH suggests that the program aimed at providing fetal monitors to perinatal hospitals can be considered financially beneficial. However, it is important to note that actual costs and benefits may vary depending on the specifics of the program and the context, in which it is implemented. Hence, additional analysis might be necessary to fully evaluate the costs and benefits of the project.

Furthermore, this type of economic analysis is rather time-consuming, and it is considered to be appropriate when a company is faced with a big decision, which can have an impact on the success of a project. A cost-benefit analysis is a useful tool for developing a new business strategy, determining the feasibility of a new project, and comparing investment opportunities.

In summary, a structured and systematic approach to decision-making can help enhance the efficiency of business operations. The process of developing decisions involves consideration of the following ways:

1) establishing clear goals and objectives which should be specific, measurable, achievable, relevant, and time-bound; they should be aligned with the overall vision and mission of an organization and lead to the identification of strategic options.

2) conducting a thorough analysis of the business environment, including market trends, customer needs, competitors, and regulatory requirements.

3) developing an action plan which includes review of previous projects, implementation of current projects, and consideration of opportunities for the future.

The steps mentioned above can be implemented through a variety of decision-making techniques and applying the best practices. NGOs also use different tools depending on their structure, size, and goals. Except for straightforward approaches, such as majority voting and group discussions, organizations can choose more advanced techniques to solve complex problems, evaluate potential costs and benefits of different options, determine the best course of action.

3.3. Substantiation of the mixed managerial model and its impact on the improvement of company's performance

A mixed managerial model refers to a decision-making process that involves both quantitative and qualitative factors. This model combines both objective data and subjective input from managers to arrive at a decision. The quantitative factors are usually numerical data, such as financial metrics or statistical analysis. These factors are analyzed using data analysis tools and mathematical models to provide a basis for decision-making.

The Analytic Hierarchy Process (AHP) is a mixed managerial decision-making technology which combines mathematics (i.e., financial and statistical data) with psychology (i.e., evaluation based on individual perception of facts). The AHP is used to make decisions based on a set of criteria and provides a rational framework for solving a problem by evaluating its alternative options.

The NGO specializing in medical equipment can conduct the AHP to prioritize which healthcare supplier to choose while providing medical facilities with equipment/goods. Here are the steps "St. Panteleimon Charitable Foundation to help sick people" can follow to implement the AHP while making decisions:

1) defining the problem and setting the goal (providing Poltava hospitals and local community centers with inter-agency reproductive health kits for crisis situations);

2) determining the criteria (for example, considering the quality, delivery time, availability, cost, and reliability of the healthcare suppliers based on the needs of medical facilities and the impact of provided goods);

3) assigning relative weights to each criterion through pairwise comparisons based on the scale from 1 to 3 (the higher criterion weight, the more important is this criterion among the others); the weights can be determined through discussion and consensus-building;

4) evaluating alternatives using a 1-9 scale, based on how well they meet each criterion (in our case, the suppliers are international Medical Export Group and two Ukrainian providers AngelMed and Slavna);

5) calculating scores for each option using a specialized software as it is shown in table 3.4.

Table 3.4. The AHP Analysis of the Project

MCDM	Quality	Delivery Time	Availability	Cost	Reliability	Weighted Sum	Rank
Criterion Weight	0.222	0.111	0.111	0.222	0.333		
MEG (Medical Export Group)	8	4	8	6	9	7.444	1
AngelMed	6	7	7	7	5	6.111	3
Slavna	7	7	6	8	8	7.444	2

Source: Compiled by the Author

Processed by Multiple-Criteria Decision-Making Online Calculator https://people.revoledu.com/kardi/tutorial/AHP/MCDM_Calculator.html

The organization can use the ranks and other information gathered through the AHP analysis to make efficient decisions which prioritize the needs of healthcare facilities and patients. However, after implementing a project, it is important to evaluate its effectiveness and make any necessary adjustments.

Other decision-making techniques which are used to evaluate and compare options based on a set of criteria are a prioritization matrix and a scoring method. The prioritization matrix allows to arrange tasks visually in order of their importance and urgency. It involves creating a matrix with urgency on one axis and importance on the other axis. The prioritization matrix is a useful tool when the organization has limited resources. Moreover, it is a good alternative for a better time management.

The NGO specializing in medical equipment can also implement this decision-making technique to prioritize its tasks, not waste precious time and resources, ensure that they are allocated to the hubs with the greatest needs, and ultimately maximize the impact of their work. Thus, the tasks can be subdivided and distributed to different departments for faster accomplishment as it is shown in figure 3.4.

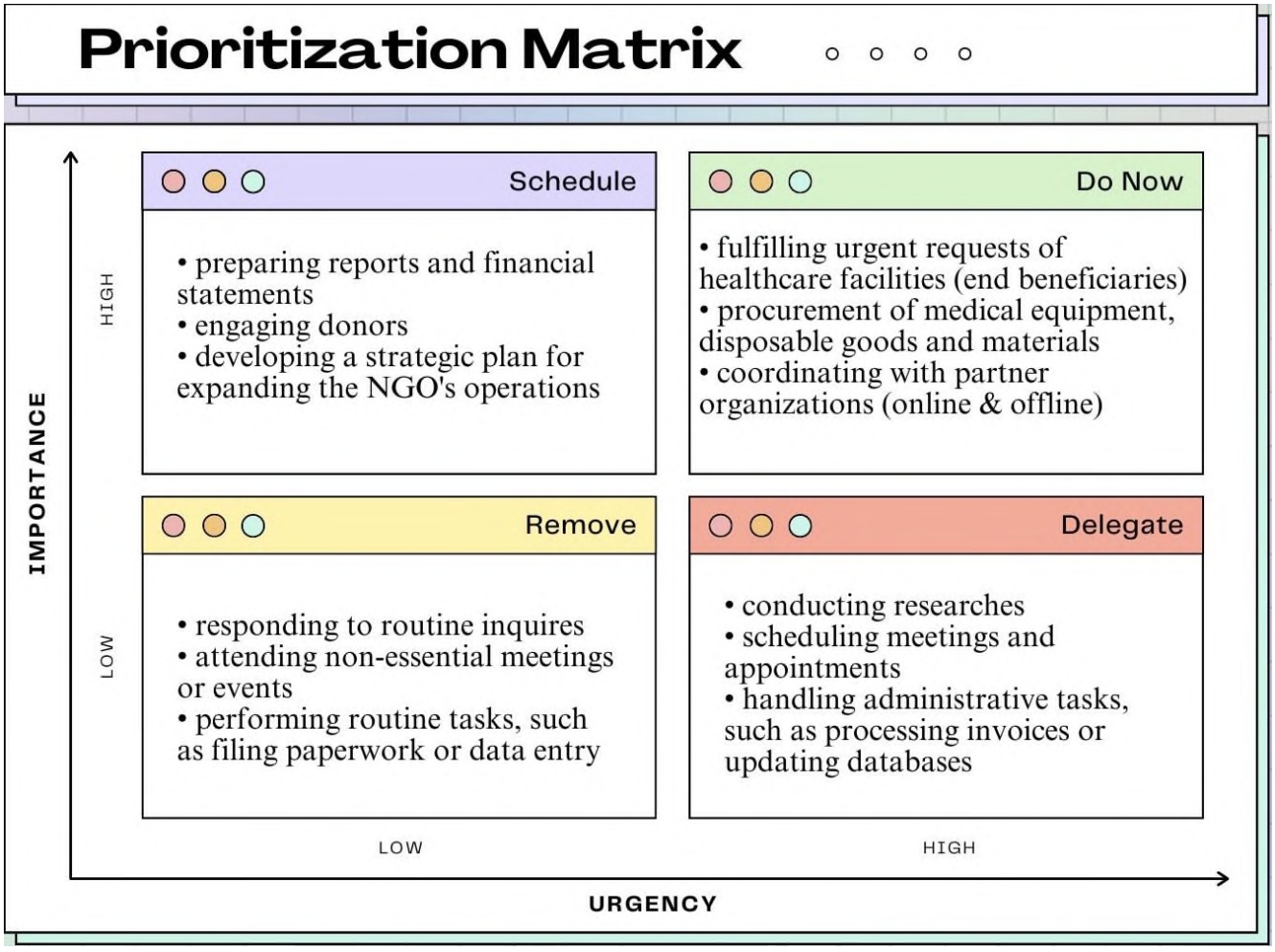

Figure 3.4. The Prioritization Matrix of the Tasks

Source: Compiled by the Author

On the other hand, if management of the organization needs to make a more objective and quantitative decision, it is possible to choose a scoring method. This decision-making technique involves assigning scores to different options based on a set of criteria. Each criterion is given a weight, and each option is scored based on how well it meets each criterion. The scores are then arranged according to the criteria weights and added up to determine the total score for each option. The option with the highest score is generally considered the best choice. In contrast to the prioritization matrix, in which alternatives are evaluated based on two factors (i.e., importance and urgency), the scoring method evaluates options based on multiple criteria.

Let us suppose that the NGO needs to select a new type of medical equipment (e.g., a fetal monitor) which does not require any special skills for hospital staff and can work in the conditions of blackouts, air raids, and other unforeseen circumstances. Hence, it is necessary to identify the criteria, define a scoring system for each criterion, assign weights to each criterion based on their relative importance to the decision, and, finally, evaluate three different options against criteria. The parameters of each option alongside the scorecard are indicated in the table below (table 3.5).

Table 3.5. The Scorecard of the Options' Parameters

Criterion	**Scoring System**	**Weight**	**Option A** Edan FTS-6	**Option B** Edan F2/F3	**Option C** Edan FTS-3
Cost	1 – 10	40%	4	8	7
Mobility	1 – 3	30%	1	2	3
Simplicity of Use	1 – 5	10%	1	4	5
Battery Capacity	1 – 3	20%	1	2	3

Source: Compiled by the Author

It is worth noting that different scoring systems are used for assigning weights to different criteria, because a more complex criterion requires a more detailed assessment. Therefore, a larger scale of 1-10 is used to capture the nuances of this criterion. Applying these scores, it is possible to calculate the total score for each option. Based on the

calculations, the NGO should prioritize Option C, which has the highest total score, as it is marked in table 3.6.

Table 3.6. The Results of the Scoring Model

Criterion	Weight	Option A	Option B	Option C
Cost	40%	1,6	3,2	2,8
Mobility	30%	0,3	0,6	0,9
Simplicity of Use	10%	0,1	0,4	0,5
Battery Capacity	20%	0,2	0,4	0,6
Total Score	**100%**	**2,2**	**4,6**	**4,8**

Source: Compiled by the Author

Processed in Excel

It should be pointed out that a scoring method can also be implemented when it is necessary to decide which region to prioritize for the distribution of a new type of medical equipment. This decision-making technique is more objective and straightforward, as opposed to the AHP. The latter is more complex and time-consuming. However, the AHP allows for more subjective judgments to be incorporated into the decision, whereas scoring methods tend to be less flexible, as they rely on pre-defined rules and pre-determined criteria.

Furthermore, the qualitative factors, which are subjective and affect a decision-making process, include such elements as personal judgment, intuition, and experience. These factors are usually more difficult to quantify, as they are often based on the opinions and insights of managers and other stakeholders. In this case, creative problem-solving tools can be implemented to help generate new and innovative ideas, and to find solutions to complex problems.

Brainstorming, mind mapping, fishbone diagrams, and the Six Thinking Hats are widely used in international practice, especially in the fields of environmental and economic development, health and education, culture and society, governance and human

rights. For instance, by applying the fishbone diagram (i.e., a structured approach to identify root causes of complex problems), NGOs are able to define key areas for intervention, develop comprehensive strategies and, as a result, launch more targeted and effective campaigns to address the global issues, such as maternal mortality, low vaccination rates, food security, water sanitation, etc.

Moreover, the Six Thinking Hats technique is used to promote parallel thinking and explore multiple perspectives. By considering different views, team members can gain a more comprehensive understanding of the decision and make a more informed and objective choice. In particular, each team member should wear a so-called "hat". For example, one person might be assigned to put on the "yellow hat", which represents positive thinking and takes into consideration the benefits of different options, whereas another person might wear the "white hat", which stands for rational thinking and facts.

Besides, a team can use mind mapping tools to visualize, systematize, and organize ideas to create a structure. A successful case of applying mind mapping is the Economic Recovery and Development program implemented by the International Rescue Committee, a global humanitarian organization that provides aid and support to refugees and displaced persons in crisis zones around the world. By using mind mapping, there was created a project plan which mapped out various stages of the program, from initial needs assessments and market analysis to monitoring and data evaluation. Thus, both qualitative and quantitative elements were combined and analyzed.

The mixed managerial model recognizes that a blend of subjective and objective factors plays an important role in decision-making. By combining both types of information, the model seeks to reach more effective decisions. Overall, the implementation of mixed decision-making techniques in a management model can lead to higher quality decisions that are more aligned with the organization's goals and objectives.

CONCLUSIONS

The bachelor's thesis provides a careful analysis of the concept of decision-making in the scope of management, describes in detail various decision-making techniques, and substantiates a positive impact of their implementation on enhancing the efficiency of business operations. The best practices in the use of decision-making techniques have formed the foundation of the paper. The basis of the study consists in the fact that decision-making is a fundamental process that is essential to the success of any organization.

By systematizing a theoretical material on managerial approaches to a decision-making process, it has been found out that there exist various models and frameworks, among which managers can choose the most appropriate one for a particular decision-making situation, leading to more effective outcomes. The most commonly used decision-making models are rational, bounded rationality, and intuitive approaches. Rational decision-making model is based on logical thinking and analysis of available information. This approach involves identifying the problem, gathering information, analyzing data, selecting the best alternative, and implementing it.

However, in reality, decision-makers may not have complete information, and, as a result, their decisions may be influenced by cognitive biases. The bounded rationality approach recognizes such lack of information, as well as limited time, and involves selecting the first alternative which needs the minimum acceptable set of criteria. Therefore, managers may choose this satisfactory approach to simplify the decision-making process. Another model is intuitive, which can be effectively applied if managers have a lot of experience and can quickly recognize patterns to make informed decisions.

It has been discovered that the stages of the evolution of decision-making techniques can be considered a valuable source of inspiration for creating new algorithms. Moreover, they address the current demands in the field of management. The research conducted in this paper has shown that decision-making techniques have developed significantly over time, and modern technologies have played a crucial role in this evolution. It has been justified that implementation of decision support systems can make a difference in how

one runs a business. They can help a company to succeed by solving common workplace problems and overcoming potential organizational challenges. Applying a correct business strategy can strengthen the company and lead to effective and long-lasting solutions. Recently, management decision-making technology has been widely adopted by organizations, and the progress of information technologies has become a major breakthrough in the way how companies make decisions. In particular, nowadays is the age of big data with an upswing in business information and business administration.

Artificial Intelligence has also made its contribution to decision techniques. For example, ChatGPT can provide managers with valuable insights and templates. Information technologies can also automate routine decisions and, consequently, free up time and resources for more complex decisions. However, an increase in the usage of experimental applications is raising a lot of public concern, especially regarding ethical and legal issues related to data privacy and security. In addition, not all managers are able to interpret the data generated by these technologies.

Although modern technologies have made a powerful impact on the process of making decisions as well as its speed, they cannot replace human judgement and intuition, which are essential components of effective decision-making. Thus, in order to achieve better results for the organization, it is necessary to combine different approaches, as it has been proved in the course of the conducted research.

The bachelor's thesis provides a clear description of non-governmental organizations and their peculiar features in contrast to public institutions and commercial entities. These organizations often have limited resources and rely heavily on donations and grants. Therefore**,** their decisions must be aligned with their mission and values, and they must demonstrate accountability and transparency to their stakeholders.

At present, business is facing a number of challenges: how to perform internal tasks, how to collaborate with other organizations, how to maintain reputation and sustainability, etc. Modern management thinking is characterized by the adoption of techniques that can support business performance and administration. It has been found out that many NGOs make efforts to use a range of decision-making techniques to ensure that they make informed and effective decisions which align with their mission and

values. However, some companies still use traditional hierarchical decision-making structures, where decisions are made by a small group of leaders or executives. It should be pointed out that diverse approaches and tools can help NGOs consider a variety of factors, such as the impact of their decisions on stakeholders, the feasibility of different options, and the risks and opportunities associated with different courses of action.

The research on the ways of developing business decisions is based on the internship completed at "St. Panteleimon Charitable Foundation to help sick people". It has been verified that a participatory approach can increase the effectiveness of decision-making. The foundation should involve its stakeholders in the process of making decisions by conducting surveys and focus groups. This approach can help the NGO identify the needs and preferences of its beneficiaries and tailor its services accordingly.

By means of conducting stakeholder, force field, cost-benefit analyses, it has been validated that decision-making techniques are useful tools for developing a strategic plan, determining the feasibility of a new project, and comparing different options. Furthermore, a mixed managerial model involves combining various decision-making techniques to suit the context and a type of the decision being made. The set of mathematical models, scoring methods, prioritization matrixes can be implemented alongside creative problem-solving tools to systematize, organize, and visualize ideas and to reach more effective decisions.

Overall, effective decision-making requires a thorough understanding of the context and factors which influence the decision-making process. Managers should be able to select the best alternative based on the situation and the level of the risk involved. They should also be open to using modern technologies to aid their decision-making processes, while ensuring that ethical and legal issues are taken into account.

It has been highlighted that non-governmental organizations require a different approach to decision-making, emphasizing their mission and values. The results of this paper can be used to improve decision-making processes and organizational performance in both profit and nonprofit sectors. What is more, the concept of decision-making represents a challenging field of investigation, meaning that it needs more careful studies, because of its importance in enhancing the efficiency of business operations.

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ANNEXES

Annex 1

Micro-Assessment Questionnaire

Subject area *(key questions in **bold**)*	**Yes**	**No**	**N/A**	**Risk Assessment**	**Risk points**
1.1 Is the IP legally registered? If so, is it in compliance with registration requirements? Please note the legal status and date of registration of the entity.	Yes			Low	1
1.2 If the IP received United Nations resources in the past, were significant issues reported in managing the resources, including from previous assurance activities.		No		Low	1
1.3 Does the IP have statutory reporting requirements? If so, are they in compliance with such requirements in the prior three fiscal years?	Yes			Low	1
1.4 Does the governing body meet on a regular basis and perform oversight functions?	Yes			Low	1
1.5 If any other offices/ external entities participate in implementation, does the IP have policies and process to ensure appropriate oversight and monitoring of implementation?			N/A	N/A	-
1.6 Does the IP show basic financial stability in-country (core resources; funding trend) ***Provide the amount of total assets, total liabilities, income and expenditure for the current and prior three fiscal years.***	Yes			Low	1
1.7 Can the IP easily receive funds? Have there been any major problems in the past in the receipt of funds, particularly where the funds flow from government ministries?	Yes			Low	1
1.8 Does the IP have any pending legal actions against it or outstanding material/significant disputes with vendors/contractors? *If so, provide details and actions taken by the IP to resolve the legal action.*		No		N/A	-
1.9 Does the IP have an anti-fraud and corruption policy?		No		Significant	3
1.10 Has the IP advised employees, beneficiaries and other recipients to whom they should report if they suspect fraud, waste or misuse of agency resources or property? If so, does the IP have a policy against retaliation relating to such reporting?		No		Significant	3
1.11 Does the IP have any key financial or operational risks that are not covered by this questionnaire? If so, please describe. *Examples: foreign exchange risk; cash receipts.*	Yes			High	4
Total number of questions in subject area:	**11**				
Total number of applicable questions in subject area:	**9**				
Total number of applicable key questions in subject area:	**4**				
Total number of risk points:	**16**				
Risk score	**1,777777778**				
Area risk rating	**Low**				
Subject area *(key questions in **bold**)*	**Yes**	**No**	**N/A**	**Risk Assessment**	**Risk points**
2.1. Does the IP have and use sufficiently detailed written policies, procedures and other tools (e.g. project development checklist, work planning templates, work planning schedule) to develop programmes and plans?	Yes			Low	1

2.2. Do work plans specify expected results and the activities to be carried out to achieve results, with a time frame and budget for the activities?	Yes			Significant	6
2.3 Does the IP identify the potential risks for programme delivery and mechanisms to mitigate them?	Yes			Low	1
2.4 Does the IP have and use sufficiently detailed policies, procedures, guidelines and other tools (checklists, templates) for monitoring and evaluation?	Yes			Low	1
2.5 Does the IP have M&E frameworks for its programmes, with indicators, baselines, and targets to monitor achievement of programme results?	Yes			Significant	3
2.6 Does the IP carry out and document regular monitoring activities such as review meetings, on-site project visits, etc.	Yes			Significant	6
2.7 Does the IP systematically collect, monitor and evaluate data on the achievement of project results?	Yes			Low	1
2.8 Is it evident that the IP followed up on independent evaluation recommendations?			N/A	N/A	-
Total number of questions in subject area:	**8**				
Total number of applicable questions in subject area:	**7**				
Total number of applicable key questions in subject area:	**2**				
Total number of risk points:	**19**				
Risk score	**2,714285714**				
Area risk rating	**Moderate**				
Subject area *(key questions in **bold**)*	**Yes**	**No**	**N/A**	**Risk Assessment**	**Risk points**
3.1 Are the IP's recruitment, employment and personnel practices clearly defined and followed, and do they embrace transparency and competition?	Yes			Moderate	4
3.2 Does the IP have clearly defined job descriptions?	Yes			Low	1
3.3 Is the organizational structure of the finance and programme management departments, and competency of staff, appropriate for the complexity of the IP and the scale of activities? Identify the key staff, including job titles, responsibilities, educational backgrounds and professional experience.	Yes			Low	1
3.4 Is the IP's accounting/finance function staffed adequately to ensure sufficient controls are in place to manage agency funds?	Yes			Low	1
3.5 Does the IP have training policies for accounting/finance/ programme management staff? Are necessary training activities undertaken?	Yes			Moderate	2
3.6 Does the IP perform background verification/checks on all new accounting/finance and management positions?	Yes			Low	1
3.7 Has there been significant turnover in key finance positions the past five years? If so, has the rate improved or worsened and appears to be a problem?		No		Low	1
3.8 Does the IP have a documented internal control framework? Is this framework distributed and made available to staff and updated periodically? If so, please describe.		No		High	4
Total number of questions in subject area:	**8**				
Total number of applicable questions in subject area:	**8**				
Total number of applicable key questions in subject area:	**3**				
Total number of risk points:	**15**				
Risk score	**1,875**				
Area risk rating	**Low**				
	Yes	**No**	**N/A**		

Subject area *(key questions in **bold**)*				**Risk Assessment**	**Risk points**
4.1 Does the IP have an accounting system that allows for proper recording of financial transactions from United Nations agencies, including allocation of expenditures in accordance with the respective components, disbursement categories and sources of funds?	Yes			Low	1
4.2 Does the IP have an appropriate cost allocation methodology that ensures accurate cost allocations to the various funding sources in accordance with established agreements?	Yes			Low	1
4.3 Are all accounting and supporting documents retained in an organized system that allows authorized users easy access?	Yes			Low	1
4.4 Are the general ledger and subsidiary ledgers reconciled at least monthly? Are explanations provided for significant reconciling items?	Yes			Low	1
4.5 Are the following functional responsibilities performed by different units or individuals: (a) authorization to execute a transaction; (b) recording of the transaction; and (c) custody of assets involved in the transaction?	Yes			Low	1
4.6 Are the functions of ordering, receiving, accounting for and paying for goods and services appropriately segregated?	Yes			Low	1
4.7 Are bank reconciliations prepared by individuals other than those who make or approve payments?	Yes			Low	1
4.8 Are budgets prepared for all activities in sufficient detail to provide a meaningful tool for monitoring subsequent performance?	Yes			High	8
4.9 Are actual expenditures compared to the budget with reasonable frequency? Are explanations required for significant variations from the budget?	Yes			High	8
4.10 Is prior approval sought for budget amendments in a timely way?	Yes			Low	1
4.11 Are IP budgets approved formally at an appropriate level?	Yes			Low	1
4.12 Do invoice processing procedures provide for: **· Copies of purchase orders and receiving reports to be obtained directly from issuing departments?** **· Comparison of invoice quantities, prices and terms with those indicated on the purchase order and with records of goods/services actually received?** **· Checking the accuracy of calculations?**	Yes			Moderate	4
4.13 Are payments authorized at an appropriate level? Does the IP have a table of payment approval thresholds?	Yes			Low	1
4.14 Are all invoices stamped '*PAID*', approved, and marked with the project code and account code?	Yes			Low	1
4.15 Do controls exist for preparation and approval of payroll expenditures? Are payroll changes properly authorized?	Yes			Low	1
4.16 Do controls exist to ensure that direct staff salary costs reflects the actual amount of staff time spent on a project?	Yes			Low	1
4.17 Do controls exist for expense categories that do not originate from invoice payments, such as DSAs, travel, and internal cost allocations?	Yes			Low	1
4.18 Does the IP have a stated basis of accounting (i.e. cash or accrual) and does it allow for compliance with the agency's requirement?	Yes			Low	1
4.19 Does the IP have an adequate policies and procedures manual and is it distributed to relevant staff?	Yes			Low	1

4.20 Does the IP require dual signatories / authorization for bank transactions? Are new signatories approved at an appropriate level and timely updates made when signatories depart?		No		High	8
4.21 Does the IP maintain an adequate, up-to-date cashbook, recording receipts and payments?			N/A	N/A	-
4.22 If the partner is participating in micro-finance advances, do controls exist for the collection, timely deposit and recording of receipts at each collection location?			N/A	N/A	-
4.23 Are bank balances and cash ledger reconciled monthly and properly approved? Are explanations provided for significant, unusual and aged reconciling items?	Yes			Low	1
4.24 Is substantial expenditure paid in cash? If so, does the IP have adequate controls over cash payments?			N/A	N/A	-
4.25 Does the IP carry out a regular petty cash reconciliation?			N/A	N/A	-
4.26 Are cash and cheques maintained in a secure location with restricted access? Are bank accounts protected with appropriate remote access controls?			N/A	N/A	-
4.27 Are there adequate controls over submission of electronic payment files that ensure no unauthorized amendments once payments are approved and files are transmitted over secure/encrypted networks?	Yes			Low	1
4.28 Does the IP have a process to ensure expenditures of subsidiary offices/ external entities are in compliance with the work plan and/or contractual agreement?			N/A	N/A	-
4.29 Is the internal auditor sufficiently independent to make critical assessments? To whom does the internal auditor report?		No		High	4
4.30 Does the IP have stated qualifications and experience requirements for internal audit department staff?			N/A	High	4
4.31 Are the activities financed by the agencies included in the internal audit department's work programme?			N/A	High	4
4.32 Does the IP act on the internal auditor's recommendations?			N/A	High	4
Total number of questions in subject area:	**32**				
Total number of applicable questions in subject area:	**26**				
Total number of applicable key questions in subject area:	**16**				
Total number of risk points:	**62**				
Risk score	**2,384615385**				
Area risk rating	**Moderate**				

Subject area *(key questions in **bold**)*	**Yes**	**No**	**N/A**	**Risk Assessment**	**Risk points**
5.1 Is there a system of adequate safeguards to protect assets from fraud, waste and abuse?	Yes			Low	1
5.2 Are subsidiary records of fixed assets and inventory kept up to date and reconciled with control accounts?			N/A	N/A	-
5.3 Are there periodic physical verification and/or count of fixed assets and inventory? If so, please describe?			N/A	N/A	-
5.4 Are fixed assets and inventory adequately covered by insurance policies?			N/A	N/A	-
5.5 Do warehouse facilities have adequate physical security?			N/A	N/A	-
5.6 Is inventory stored so that it is identifiable, protected from damage, and countable?			N/A	N/A	-
5.7 Does the IP have an inventory management system that enables monitoring of supply distribution?			N/A	N/A	-
5.8 Is responsibility for receiving and issuing inventory segregated from that for updating the inventory records?			N/A	N/A	-
5.9 Are regular physical counts of inventory carried out?			N/A	N/A	-

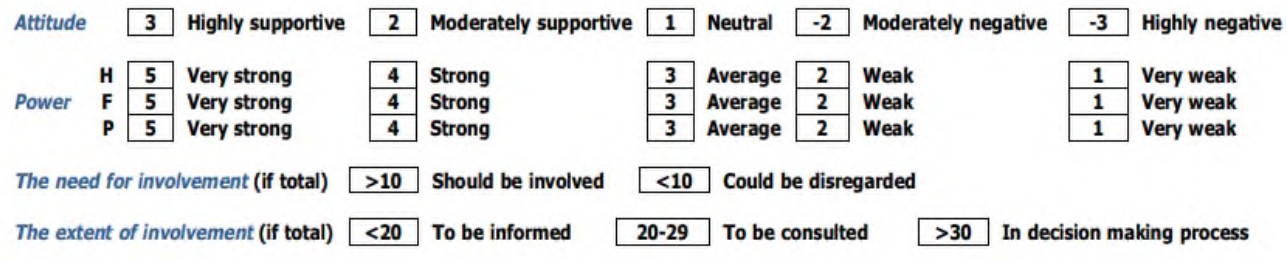
Total number of questions in subject area:	**9**				
Total number of applicable questions in subject area:	**1**				
Total number of applicable key questions in subject area:	**0**				
Total number of risk points:	**1**				
Risk score	**1**				
Area risk rating	**Low**				
Subject area *(key questions in **bold**)*	**Yes**	**No**	**N/A**	**Risk Assessment**	**Risk points**
6.1 Does the IP have established financial reporting procedures that specify what reports are to be prepared, the source system for key reports, the frequency of preparation, what they are to contain and how they are to be used?	Yes			Low	1
6.2 Does the IP prepare overall financial statements?	Yes			Low	1
6.3 Are the IP's overall financial statements audited regularly by an independent auditor in accordance with appropriate national or international auditing standards? If so, please describe the auditor.		No		High	8
6.4 Were there any major issues related to ineligible expenditure involving donor funds reported in the audit reports of the IP over the past five years?		No		High	8
6.5 Have any significant recommendations made by auditors in the prior five audit reports and/or management letters over the past five years and have not yet been implemented?		No		High	4
6.6 Is the financial management system computerized?	Yes			Low	1
6.7 Can the computerized financial management system produce the necessary financial reports?	Yes			Low	1
6.8 Does the IP have appropriate safeguards to ensure the confidentiality, integrity and availability of the financial data? *E.g. password access controls; regular data back-up.*	Yes			Low	1
Total number of questions in subject area:	**8**				
Total number of applicable questions in subject area:	**8**				
Total number of applicable key questions in subject area:	**3**				
Total number of risk points:	**25**				
Risk score	**3,125**				
Area risk rating	**Moderate**				
Subject area *(key questions in **bold**)*	**Yes**	**No**	**N/A**	**Risk Assessment**	**Risk points**
7.1 Does the IP have written procurement policies and procedures?	Yes			Low	1
7.2 Are exceptions to procurement procedures approved by management and documented?	Yes			Low	1
7.3 Does the IP have a computerized procurement system with adequate access controls and separation of duties between entering purchase orders, approval and receipting of goods? Provide a description of the procurement system.	Yes			Significant	3
7.4 Are procurement reports generated and reviewed regularly? Describe reports generated, frequency and review & approvers.	Yes			Low	1
7.5 Does the IP have a structured procurement unit with defined reporting lines that foster efficiency and accountability?		No		High	4
7.6 Is the IP's procurement unit resourced with qualified staff who are trained and certified and considered experts in procurement and conversant with UN / World Bank / European Union	Yes			Moderate	2

procurement requirements in addition to the a IP's procurement rules and regulations?					
7.7 Have any significant recommendations related to procurement made by auditors in the prior five audit reports and/or management letters over the past five years and have not yet been implemented?			N/A	N/A	-
7.8 Does the IP require written or system authorizations for purchases? If so, evaluate if the authorization thresholds are appropriate?	Yes			Low	1
7.9 Do the procurement procedures and templates of contracts integrate references to ethical procurement principles and exclusion and ineligibility criteria?	Yes			Moderate	2
7.10 Does the IP obtain sufficient approvals before signing a contract?	Yes			Low	1
7.11 Does the IP have and apply formal guidelines and procedures to assist in identifying, monitoring and dealing with potential conflicts of interest with potential suppliers/procurement agents? If so, how does the IP proceed in cases of conflict of interest?	Yes			Moderate	2
7.12 Does the IP follow a well-defined process for sourcing suppliers? Do formal procurement methods include wide broadcasting of procurement opportunities?	Yes			Low	1
7.13 Does the IP keep track of past performance of suppliers? E.g. database of trusted suppliers.	Yes			Low	1
7.14 Does the IP follow a well-defined process to ensure a secure and transparent bid and evaluation process? If so, describe the process.	Yes			Low	1
7.15 When a formal invitation to bid has been issued, does the IP award the contract on a pre-defined basis set out in the solicitation documentation taking into account technical responsiveness and price?	Yes			Low	1
7.16 If the IP is managing major contracts, does the IP have a policy on contracts management / administration?			N/A	N/A	-
7.17 Are there personnel specifically designated to manage contracts or monitor contract expirations?			N/A	N/A	-
7.18 Are there staff designated to monitor expiration of performance securities, warranties, liquidated damages and other risk management instruments?			N/A	N/A	-
7.19 Does the IP have a policy on post-facto actions on contracts?			N/A	N/A	-
7.20 How frequent do post-facto contract actions occur?			N/A	N/A	-
Total number of questions in subject area:	**20**				
Total number of applicable questions in subject area:	**14**				
Total number of applicable key questions in subject area:	**5**				
Total number of risk points:	**22**				
Risk score	**1,571428571**				
Area risk rating	**Low**				
Total number of questions:	**96**				
Total number of applicable questions:	**73**				
Total number of applicable key questions:	**33**				
Total number of risk points:	**160**				
Total risk score	**2,191780822**				
Overall risk rating	**Low**				

Annex 2

Stakeholder Analysis Matrix

Stakeholder	Criteria of evaluation						Decisions	
	Attitude	Power			Influence	Total	The need of involvement	Extent of involvement
		H	F	P				
UNICEF Ukraine	3	4	4	4	12	36	should be involved	in decision-making
Other UN agencies and international organizations	2	3	3	4	10	20	should be involved	to be consulted
Ministry of Health	2	3	3	5	11	22	should be involved	to be consulted
Political representatives	1	3	4	5	12	12	should be involved	to be informed
Local authorities	2	4	4	5	13	26	should be involved	to be consulted
Public health managers	3	5	2	3	10	30	should be involved	in decision-making
Medical Professionals	3	4	2	1	7	21	should be involved	to be consulted
Healthcare providers	3	4	2	1	7	21	should be involved	to be consulted
Civil society organizations	2	4	2	3	9	18	should be involved	To be informed
Local communities	2	4	2	3	9	18	should be involved	to be informed
Local NGOs	1	3	2	1	6	6	may be disregarded	N/A
Media	2	5	1	3	9	18	should be involved	to be informed
Religious organizations	1	3	1	1	5	5	may be disregarded	N/A
Celebrities (role models)	2	5	2	2	9	18	should be involved	to be informed



H - human resources

F - financial resources

P – political resources