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Option : Management et Entrepreneuriat

THESIS:

Risk and Opportunity Management in Project

CASE STUDY: NAFTAL

Presented by :

M.Mondher LAIFA

M.Fethi NEDJAR

Supervisor :

Mme.Kamelia Boulgamh

Enseignant chercheur

11th Promotion

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Sincerely,

DEDICATION

To my precious family,

I would like to express my infinite gratitude to all of you for your unwavering support throughout my life. To my dear parents, you have been my pillars thanks to your constant sacrifices, without you I could not have succeeded. To my beloved sister, Manel, you have been my source of inspiration. To my wonderful nephew and niece, Yakoub, and Misk, you have illuminated my life with your innocence and reminded me of the importance of persevering.

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To all those who have played an essential role during my life, I offer you my most sincere thanks. Your support has been the driving force behind my success. This final dissertation is a testimony of my recognition and gratitude to all of you.

With all my gratitude,

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First and foremost, I want to thank GOD for giving me the strength and courage to complete this modest work. I dedicate this humble work to:

To my beloved father, ammar , and my dear mother, ,

To my brother, Salim, and my sister, Kawter,

To the Nedjar family,

To my partner, laifa moundir,

Your unwavering support has been a pillar in my life. Each of you has uniquely contributed to my growth and enriched my memory with all the unforgettable moments we've shared. This thesis is dedicated to our strong family bond. I am extremely grateful to have such a wonderful family like you.

To all those who have played an essential role in my life, I offer my deepest thanks. Your support has been the driving force behind my success. This thesis is a testament to my appreciation and gratitude towards all of you.

Nedjar fethi

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THE LIST OF ABBREVIATIONS

PERT: Program Evaluation and Review Technique

CPM: Critical Path Method

PPS: Project Planning and Scheduling

FMEA: Failure Mode and Effects Analysis

ETA: Event Tree Analysis

ROI: Return on Investment

NPV: Net Present Value

CBA: Cost-Benefit Analysis

IRR: Internal Rate of Return

RD: Recovery time

TR: The rate of profitability

TRM: the average rate of profitability

DCF: Discounted Cash Flow

WACC: Weighted Average Cost of Capital

SWOT: Strengths, Weaknesses, Opportunities, and Threats

AMDEC: Analysis of Modes of Failure, Effects, and Criticality

ABSTRACT

Today's business landscape is characterized by fierce competition and an ever-changing market. These factors require a focus on effective project management practices. This thesis delves into a critical aspect of successful projects: risk and opportunity management.

By examining project management principles alongside profitability evaluation methods within the context of a real-world case study, this thesis aims to contribute to a better understanding of strategies that lead to successful project execution and increased financial returns.

Keywords: project management, risk management, opportunity management, project profitability

RÉSUMÉ

Le paysage économique actuel se caractérise par une concurrence féroce et un marché en constante évolution. Ces facteurs exigent une concentration sur des pratiques efficaces de gestion de projet. Ce mémoire examine un aspect critique des projets réussis : la gestion des risques et des opportunités.

En examinant les principes de gestion de projet parallèlement aux méthodes d'évaluation de la rentabilité dans le cadre d'une étude de cas concrète, ce mémoire vise à contribuer à une meilleure compréhension des stratégies qui conduisent à une exécution réussie des projets et à une augmentation des rendements financiers.

Mots-clés : gestion de projet, gestion des risques, gestion des opportunités, rentabilité du projet

ملخص

يسود المنافسة الشرسة والسوق المتغيرة باستمرار المشهد التجاري الحالي. تتطلب هذه العوامل التركيز على ممارسات إدارة المشاريع الفعالة. تتعمق هذه الأطروحة في جانب مهم من المشاريع الناجحة: إدارة المخاطر والفرص.

من خلال دراسة مبادئ إدارة المشاريع إلى جانب طرق تقييم الربحية في سياق دراسة حالة واقعية، تهدف هذه الأطروحة إلى المساهمة في فهم أفضل للاستراتيجيات التي تؤدي إلى تنفيذ المشروع الناجح وزيادة العائد المالي.

INTRODUCTORY CHAPTER

1. INTRODUCTION GENERAL

The realm of project management isn't just about following a rigid plan; it's about navigating the ever-shifting tides of uncertainty. While we meticulously chart a course towards success, unforeseen challenges and hidden gems can emerge at any turn. This is where risk and opportunity management enter the scene, acting as the yin and yang of project success. By identifying potential threats early on through brainstorming, FMEA (Failure Mode and Effects Analysis), and scenario planning, we can anticipate potential storms and build stronger defenses.

Mitigate, don't eliminate: Developing plans to lessen the impact of risks, like establishing contingency reserves or implementing training programs, allows us to navigate challenges with minimal disruption.

Constant vigilance: Regularly monitor the risk landscape and adjust mitigation strategies as needed, ensuring our project remains agile and adaptable.

Go beyond the initial project goals and actively seek ways to add value, improve efficiency, or even expand the scope if resources allow.

Organize brainstorming sessions, involve stakeholders, and leverage lessons learned from past projects to uncover potential opportunities.

Develop concrete plans to capitalize on promising opportunities, allocating resources and establishing timelines. Risk and opportunity management aren't isolated entities; they work in harmony.

By understanding both potential risks and opportunities, we can make well-informed decisions throughout the project lifecycle.

This combined approach allows us to weather challenges while staying agile enough to seize unforeseen advantages.

Proactive risk management demonstrates responsibility, while capitalizing on opportunities showcases a commitment to exceeding expectations.

By integrating risk and opportunity management, we create a dynamic project environment. We're not just prepared for the expected, but empowered to leverage the unexpected.

Projects that consistently deliver on time, within budget, and with maximized positive outcomes leave a lasting impact on stakeholders and achieve exceptional results.

2. PROBLEMATIC :

2.5.PROBLEM STATEMENT :

Despite the widespread adoption of project management methodologies, projects often face unforeseen challenges that lead to delays, budget overruns, and scope creep. These challenges can stem from various sources, such as inadequate risk identification, lack of contingency plans, or an inability to capitalize on emerging opportunities.

This thesis argues that a robust risk and opportunity management framework is vital for navigating the uncertainties inherent in projects. By proactively identifying and addressing potential threats and positive developments, project managers can improve project outcomes and achieve their desired goals, this lead us to the following question:

How does risk and opportunity management affect project conduct in a company?

From this main question a set of secondary questions arises namely:

- What are the types of risks and opportunity in projects?
- How does Naftal's risk and opportunity management process compare to industry best practices?
- How effectively does Naftal's current risk mitigation strategy address identified risks?

3. HYPOTHESES :

This thesis proposes the following hypotheses:

- **Hypothesis 1:** The implementation of a comprehensive risk and opportunity management framework will lead to a significant reduction in project risks.
- **Hypothesis 2:** Proactive identification and exploitation of opportunities will lead to improved project outcomes.
- **Hypothesis 3:** Organizations with a strong culture of risk and opportunity management will demonstrate higher project success rates compared to those with limited focus on these aspects.

These hypotheses will be tested and analyzed throughout the thesis, using relevant data and case studies.

4. WORK OBJECTIVE:

The primary objectives of this thesis are:

To develop a comprehensive understanding of risk and opportunity management within the project management framework.

To analyze the impact of effective risk and opportunity management on project outcomes.

To propose a practical framework for implementing risk and opportunity management in various project settings.

To contribute to the existing body of knowledge on project management by highlighting the importance of proactive risk and opportunity management practices.

5. STRUCTURE OF THE DISSERTATION:

Our scientific research, titled "Risk and Opportunity Management in Project," delves into the crucial aspects of project success. Divided into three comprehensive chapters, the research equips you with the necessary knowledge to navigate potential challenges and capitalize on opportunities. Each chapter is divided into two sections and each section includes subtitles for a functional sequence.

Chapter 1: Project Management: This chapter signifies a strong theoretical foundation by exploring the aspects and objective of project management. And Analysis Risk and Opportunity Management

Chapter 2: PROJECT PROFITABILITY STUDY: this one focuses on theoretical foundation to study the financial viability of projects. It equips you with the tools and techniques to conduct thorough profitability studies, and know more about the investment.

Chapter 3: Moving from theory to practice A Case Study in Risk and Opportunity Management at Naftal: The final chapter applies the theoretical concepts to a real-world scenario. Here, you'll explore a practical case study focusing on a new management project within Naftal. This chapter will demonstrate how to identify and manage risks while capitalizing on potential opportunities within the company.

➤ **As shown in the diagrams below:**

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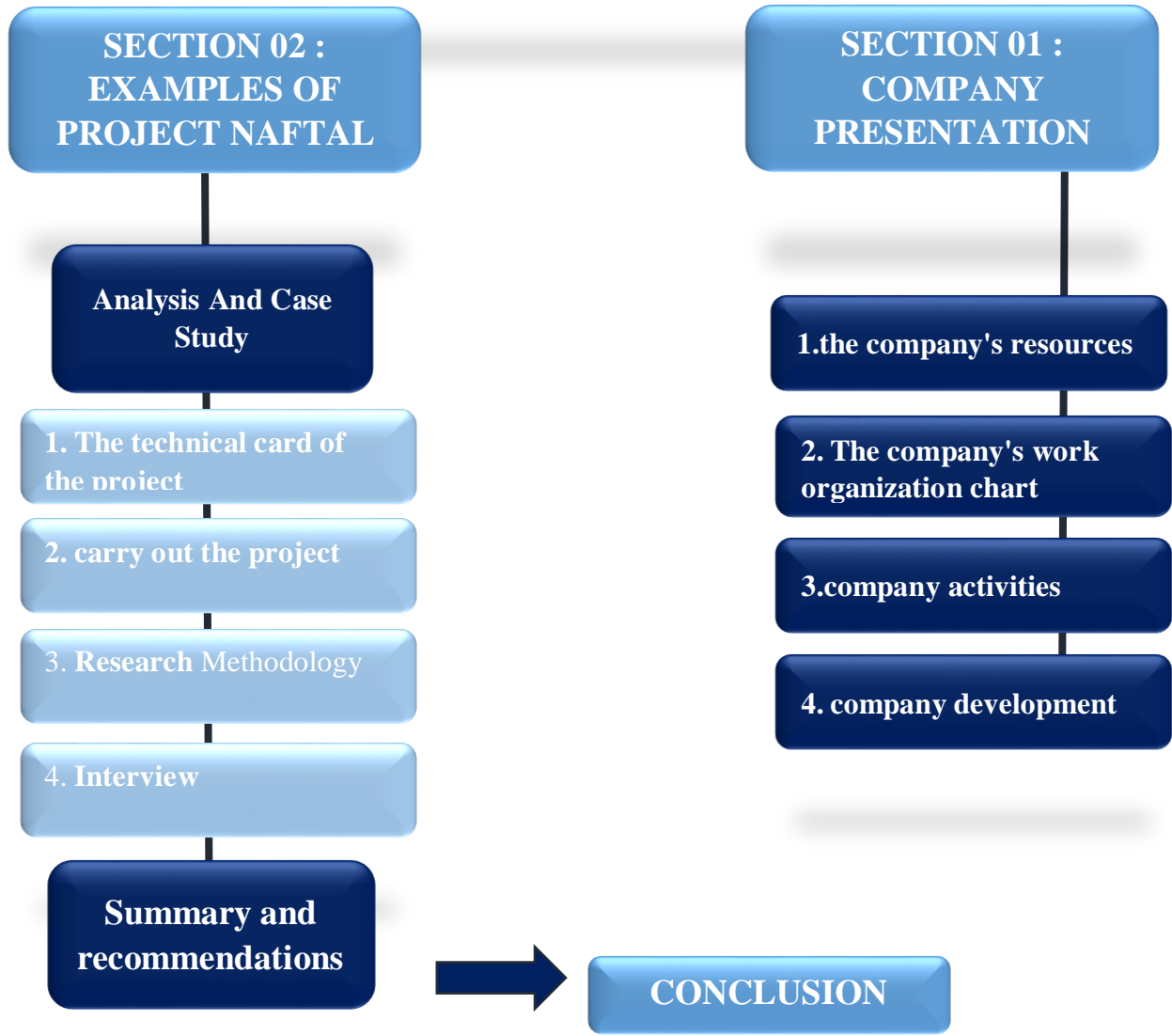
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CHAPTER 01: PROJECT MANAGEMENT

Project management is the process of applying knowledge, skills, tools, and techniques to project activities to meet project requirements. It's essentially the art of planning, organizing, leading, and controlling resources to achieve specific goals within defined timelines and budgets.

1. DEFINITION OF PROJECT MANAGEMENT

We will define the project and the project management:

Project:

A project, can be defined as a deliberately undertaken, finite endeavor that organizations establish to achieve a predetermined objective. This objective can manifest as a tangible deliverable (product), an intangible outcome (service, improved process), or a strategic shift that benefits the organization (positive change). Projects are characterized by the temporary assembly of cross-functional teams, drawing expertise from various departments or professions, to achieve the project's specific goals. Upon successful completion of the project and delivery of the desired outcome, the project team typically disbands.

Project management: the application of knowledge, skills, tools and techniques to project activities to meet project requirements. **Defined by Project Management Institute (PMI).**

Project management: the planning, organization, monitoring, control and communication of all the activities involved in achieving specific project objectives within set parameters. These parameters include time, budget, quality, scope, resources and risks. **Defined by the Association for Project Management (APM)**

Project management: the planning, scheduling, resourcing, execution and control of a temporary endeavour undertaken to create a unique product, service or result. **Defined by the Chartered Institute of Project Management (CIPM).** ^[1]

➤ **IN ESSANCE**

Project management equips you with the skills and knowledge to orchestrate successful projects. By understanding its principles, utilizing the right tools, and fostering a collaborative environment, you can turn your project vision into a reality

^[1] **Duncan Haughey: Project Planning a Step by Step .P 16**

CHAPTER 01: RISK AND OPPORTUNITY IN PROJECT MANAGEMENT

By those definition we could define that there are several key factors that contribute to successful project management. Here's a breakdown of the most important ones in this image:

9

Figure 01: The important factors of project management:



Source: Project Planning a Step by Step Guide By Duncan Haughey

We can describe the first image that these three sides represent project triangle, which is a core concept in project management. It refers to the balancing act that project managers need to perform between these three elements. They are interrelated, so a change in one will impact the others. For instance, reducing the time to complete a project may require additional costs or a reduction in scope.

Figure 02: The important new factors of project management:



Source: Project Planning a Step by Step Guide By Duncan Haughey

The second image depicts the project management quadruple constraint the new one (modern), which includes cost, quality, expectations, and scope. It builds upon the traditional project management triple constraint, which focuses on cost, time, and scope.

The four elements:

- **Cost:** The financial resources required to complete the project.
- **Quality:** The degree to which the project meets the specified requirements.
- **Expectations:** What the customer anticipates or desires from the project.
- **Scope:** The project's deliverables and features.

➤ **IN ESSANCE**

These four elements are interrelated and influence each other. For instance, increasing the scope of a project might lead to higher costs and require more time to complete. Customer expectations can also affect the project's budget, quality, and scope. By managing these four constraints effectively. ^[1]

2. PROJECT MANAGEMENT DEVELOPMENT

The development of project management capabilities in organisations, simultaneously with the application of information management systems, allow enterprise teams to work in partnership in defining plans and managing take-to-market projects by synchronising team-oriented tasks, schedules, and resource allocations. This allows cross-functional teams to create and share project information. However, this is not sufficient, information management systems have the potential to allow project management practices to take place in a real-time environment.

2.1.PROJECT MANAGEMENT EVOLUATION

2.1.1. Brief History of Project Management:

Project management has been practiced for thousands of years dating back to the Egyptian epoch, but it was in the mid-1950s that organisations commenced applying formal project management tools and techniques to complex projects. Modern project management methods had their origins in two parallel but different problems of planning and control in projects in the United States.

During the time they created two project management techniques: PERT and CPM. Here's a breakdown of the key points and their differences:

PERT (Program Evaluation and Review Technique) Designed for Projects with high uncertainty in time and cost estimates, Uses three time estimates (optimistic, pessimistic, and most likely) to calculate a probable completion date based on probability. Best suited for Research & Development projects; unique endeavors with limited historical data.

CPM (Critical Path Method) Designed for Projects requiring accurate time and cost estimates, Uses realistic estimates to identify the critical path (longest sequence of tasks) that determines project completion time. Method & Origin: Developed from the Project Planning and Scheduling (PPS) technique used by E.I. du Pont de Nemours Company for construction projects. Best suited for Projects where accurate planning and cost control are crucial, such as construction. ^[1]

[1] Duncan Haughey: A Brief History of Project Management Dec 2014 .P 20

➤ IN ESSENCE:

PERT is better for uncharted territory where timelines are vague, so it focus on Risk. CPM is ideal for well-defined projects where precise planning and budget control are essential, so it focus on Schedule.

2.1.2. Periods in the Development of Modern Project Management:

❖ Prior to 1958:

Focus shifted from craft systems to human relations in project management. Technological advancements like automobiles and telecommunication improved project execution. Early project management tools like Gantt charts and job specifications emerged.

❖ 1958-1979:

Introduction of core project management tools like CPM and PERT. Rapid development of computer technology, from mainframes to mini-computers. Rise of project management software companies.

❖ 1980-1994:

Personal computers and communication networks revolutionized information management. Affordable project management software made project management techniques more accessible. Increased focus on risk management, group dynamics, and quality management.

❖ 1995-Present:

Internet revolutionized business practices, allowing faster and more collaborative project management. Project management software with internet connectivity enables real-time project tracking and communication. ^[1]

2.2.ASPECTS OF PROJECT MANAGEMENT:

Effective project management goes beyond the essential aspects of scope, time, and cost. While these remain fundamental, there's a whole world of additional considerations that can elevate your project to new heights. Let's explore these additional areas to ensure your project's success.

- **Technical Aspects:**

These aspects focus on the technical inputs, processes, and final outputs of a project. This includes ensuring the project delivers the intended goods or services effectively.

- **Institutional, Organizational, and Management Aspects:**

This category emphasizes the importance of aligning the project with the existing organizational structure and considering the socio-cultural context where the project will be implemented. A well-designed project considers factors like existing infrastructure, legal frameworks, and cultural norms to enhance its success.

- **Social Aspects:**

Understanding the social structures and beneficiary habits is crucial for project management. By studying these aspects, project managers can tailor the project to better integrate with the existing social fabric and ensure its long-term sustainability.

- **Commercial Aspects:**

These aspects involve managing the project's commercial viability. This includes considerations like marketing the project's outputs and securing a reliable supply chain for necessary resources. Effective commercial management ensures the project remains financially sustainable after its initial implementation.

- **Financial Aspects:**

Project management requires careful consideration of the financial implications for all stakeholders involved. This includes analyzing project costs, potential revenue streams, and the overall financial feasibility of the project.

- **Economic Aspects:**

A broader perspective involves evaluating the project's potential contribution to the overall economic development of the region or nation. This analysis assesses if the project justifies the allocation of resources and contributes meaningfully to economic growth. ^[1]

^[1]Abd Ellah Bouguaba: cours Analyse et évaluation de projets ", Edition bertî, 2005 .P 50

➤ IN ESSENCE:

These project management aspects are interconnected. For instance, social aspects can influence project scope definition, ensuring the project aligns with beneficiary needs. Similarly, financial considerations influence cost management processes, requiring careful budgeting and resource allocation. Integrating these broader aspects with core project management processes like scope, time, and cost management is essential for achieving project success.

2.3. Project Management Objectives:

Successful project management transcends the execution of core processes like scope, time, and cost management. It necessitates a focus on achieving clearly defined objectives that guide project execution and ensure the delivery of value:

- **On-Time Delivery:** Completing the project within the established timeframe is crucial. This requires adhering to pre-defined deadlines and milestones, ensuring timely completion of project deliverables. ^[1]
- **Within Budget Delivery:** Project success hinges on delivering the project within the allocated budget. Effective project management involves meticulous resource allocation, cost control measures, and avoiding unnecessary expenditures.
- **Meeting Scope Objectives:** Completing all the work required to deliver the project's functionalities and features is essential. Project management ensures focus on the core deliverables as defined in the project scope, avoiding scope creep that can inflate costs and delay timelines. ^[2]
- **Delivering High-Quality Results:** Project management emphasizes delivering a project that meets the agreed-upon quality standards. This ensures the project functions as intended, fulfills user needs, and delivers the expected value.
- **Risk Management:** A crucial objective of project management is proactively identifying and mitigating potential risks that could threaten project success.
- **Stakeholder Satisfaction:** Ensuring stakeholder satisfaction throughout the project lifecycle is paramount. This requires effective communication, collaboration, and managing stakeholder expectations. ^[3]

^[1] Series: PMBOK guide: A Guide to the Project Management Body of Knowledge, (2017).P 35

^[2] Baccarin: A Guide to the Project Management Body of Knowledge (2016).

^[3] David I. Cleland : Project Management: Strategic Design and Implementation. (1994).P27

➤ **IN ESSENCE:**

By effectively managing these objectives, project managers can increase their chances of project success and deliver projects that meet their intended purpose and contribute value to all stakeholders.

3. RISK AND OPPORTUNITY MANAGEMENT

3.1.DEFINITION:

According to the Project Management Institute (PMI), risk and opportunity management in projects involves a strategic approach to identifying, assessing, and addressing uncertainties that could impact project objectives positively or negatively. This process is essential for effective project management, emphasizing the interrelation between managing risks and opportunities to enhance project outcomes.

This definition highlights that successful project management requires a strategic approach to both risks and opportunities. Imagine them as two sides of the same coin. While some uncertainties can negatively impact projects (risks), others can present positive possibilities (opportunities). The key here is that these aren't independent factors. Efforts to reduce risks can sometimes uncover new opportunities, and pursuing opportunities can introduce unforeseen risks. By understanding this interconnection, project managers can be more proactive. They can anticipate both positive and negative uncertainties, develop plans to address them, and ultimately achieve better project outcomes. ^[1]

The Two Pillars of Project Success: Risk & Opportunity Management:

➤ **The first** dimension is conventional risk (threat) management.

This involves identifying, assessing, and mitigating risks that could negatively impact the project.

➤ **The second** dimension is opportunity management.

This involves identifying, assessing, and capitalizing on opportunities that could positively impact the project.

Both qualitative and quantitative approaches can be used to assess risks and opportunities. Qualitative approaches rely on the expertise and experience of the project team, while quantitative approaches use statistical data to predict the likelihood and impact of risks and opportunities.

[1] LOUIS ,(Anthony Cox) Risk Analysis Foundations, Models, and Methods, 2008, P.129

➤ **IN ESSENCE:**

By using risk and opportunity management, project managers can increase their chances of project success. This approach helps to ensure that projects are realistic, achievable, and meet the needs of stakeholders.

3.2. Analysis of management risks :

Risk analysis is a multi-step process aimed at mitigating the impact of risks on business operations. Leaders from different industries use risk analysis to ensure that all aspects of the business are protected from potential threats. Performing regular risk analysis also minimizes the vulnerability of the business to unexpected events. ^[1]

And also relate to Risk Assessment (Identifying and Understanding Threats) they provide a systematic approach to identifying, analysing, and mitigating potential threats to project success.

Risk assessment and risk analysis are both crucial parts of project management, but they serve different purposes within the larger process of risk management.

Table 01: Difference between Risk Assessment and Risk Analysis

	RISK ASSESSMENT	RISK ANALYSIS
FOCUS	Identifies potential risks that could threaten your project.	Evaluates the impact of identified risks.
PROCESS :		
BRAINSTORMING	Identifying all possible risks.	Ranking risks based on their likelihood and severity.
QUALIFYING	Assigning a likelihood of occurrence to each risk.	Estimating the potential severity (cost, time, impact) of each risk.
OUTCOME	A list of potential risks and their likelihood of happening.	A prioritized list of risks with a clear understanding of their potential impact.

Source : by us

➤ **IN ESSENCE:**

Risk assessment is just one component of risk analysis. The other components of risk analysis are risk management and risk communication.

Risk assessment: What are the risks? (Identification and Likelihood)

Risk analysis: How bad could they be? (Impact & Prioritization)

3.2.1. risk analysis methods :

The easier and more convenient method is qualitative risk analysis. Qualitative risk analysis rates or scores risk based on the perception of the severity and likelihood of its consequences. Quantitative risk analysis, on the other hand, calculates risk based on available data.

❖ Qualitative Methods:

Brainstorming: A collaborative technique to identify potential risks through open discussion.

Delphi Technique: An iterative process where experts anonymously provide feedback on identified risks.

Scenario Planning: Developing different future scenarios to understand how they might impact the project.

Strengths: Simple to implement, encourages participation, good for initial risk identification.

Weaknesses: Subjective, may overlook important risks, difficulty in prioritizing.

❖ Quantitative Methods:

Failure Mode and Effects Analysis (FMEA): Analyzes potential equipment or process failures and their impact on the project.

Event Tree Analysis (ETA): Maps out the potential consequences of a specific event.

Monte Carlo Simulation: Uses statistical modeling to simulate different project outcomes based on probability distributions of identified risks.

Strengths: Provides a more objective assessment of risk impact, allows for cost-benefit analysis.

Weaknesses: Requires more data and expertise, can be time-consuming to implement. ^[1]

➤ IN ESSENCE:

A key difference between qualitative and quantitative: risk analysis is the type of risk each method results in. For qualitative risk analysis, this is projected risk, which is an estimation or guess of how the risk will manifest. Meanwhile, quantitative risk analysis deals with statistical risk. Unlike projected risk, statistical risk is specific and verified. For this reason, it's often used in the calculation of insurance premiums.

3.2.2. Usage of Risk Analysis:

-Risk analysis is useful in many situations:

-When you're planning projects, to help you to anticipate and neutralize possible problems.

-When you're deciding whether or not to move forward with a project.

-When you're improving safety and managing potential risks in the workplace.

-When you're preparing for events such as equipment or technology failure, theft, staff sickness, or natural disasters.

-When you're planning for changes in your environment, such as new competitors coming into the market, or changes to government policy.

➤ **The guide offers instructions for a risk analysis:**

Set the Goal: Clearly define the purpose of your risk analysis. Are you identifying potential project roadblocks, assessing business continuity needs, or investigating the root cause of recurring problems?

Collect Data: Gather information relevant to your goals. This might involve reviewing project plans, interviewing stakeholders, analysing historical data, or brainstorming potential disruptions.

Identify Risks: Based on the collected data, pinpoint potential threats or uncertainties that could impact your project, business, or process.

Value the Risks: Evaluate each risk by considering its severity (how badly it could impact your goals) and its likelihood of occurring. This can be done qualitatively (high, medium, low) or quantitatively (using probability and impact scales).

Prioritize Risks: Focus on the most critical risks. Risks with high severity and high likelihood should be addressed first.

Develop a Mitigation Plan: Create strategies to reduce the likelihood or impact of each risk. This might involve implementing preventative measures, contingency plans, or solutions to address root causes.

Follow Through: Implement the mitigation plan and monitor its effectiveness. Regularly review and update your risk analysis as circumstances change.

Review Effectiveness: Evaluate the effectiveness of your risk mitigation strategies. Did they successfully reduce the impact of the risk?

By following these steps and choosing the appropriate risk analysis method for your specific needs, you can proactively identify and address potential issues, leading to more successful projects, a more resilient business, and a deeper understanding of the root causes behind recurring problem. ^[1]

3.2.3. Risk Analysis Tools for Projects and Organizations:

- **Additional Tools:**

SWOT Analysis: Used to assess strengths, weaknesses, opportunities, and threats, typically at the beginning of a project or strategic planning process to understand internal and external factors influencing the project.

Root Cause Analysis: Investigates the underlying causes of identified risks to prevent future occurrences.

Risk Register: A central repository for documenting identified risks, their likelihood, impact, and mitigation strategies.

- **Choosing the Right Tool:**

The selection of the most suitable tool depends on several factors:

Project/organizational complexity: Complex situations might benefit from quantitative methods like FMEA or simulations.

Failure Mode and Effects Analysis (FMEA): Employed to identify potential failure modes and their effects, commonly used in manufacturing and engineering to proactively address risks before they occur.

PMESII-PT: Focuses on political, military, economic, social, information, infrastructure, physical environment, and time aspects, often utilized in military or complex operational environments to analyze risks comprehensively.

PEST Analysis: Evaluates political, economic, social, and technological factors impacting a project or organization, useful for understanding external influences on business operations.

Scenario Analysis: Helps explore possible future threats by considering various scenarios, beneficial for strategic planning and decision-making to anticipate and prepare for potential risks.

[1] Russell Darnall and John M: Preston Project Management from Simple to Complex. 2012. P 100

- **IN ESSENCE:**

Each tool offers a unique perspective on risk analysis and can be applied at different stages of a project or organizational planning process to enhance risk management practices effectively. ^[1]

3.3.TYPES OF RISK MANAGEMENT

Risk management is a crucial process in projects and organizations, aiming to identify, assess, and mitigate potential threats. Here's a breakdown of the common types of risk management:

1. Proactive vs. Reactive Risk Management:

- **Proactive:**

This approach focuses on identifying and addressing risks before they occur. It involves techniques like brainstorming, scenario planning, and FMEA (Failure Mode and Effects Analysis).

- **Reactive:**

This approach deals with risks only after they materialize. While reactive management can address immediate issues, it's generally less effective than proactive strategies. ^[1]

2. Positive vs. Negative Risk Management:

- **Positive Risk Management:**

This approach focuses on identifying and capitalizing on potential opportunities associated with risks. It involves analyzing how seemingly negative events could have positive outcomes.

- **Negative Risk Management:**

This is the traditional approach of identifying and mitigating potential threats to project success.

3. Qualitative vs. Quantitative Risk Management:

- **Qualitative Risk Management:**

This approach uses subjective methods like brainstorming and expert judgment to assess risks. It focuses on the likelihood and impact (high, medium, low) of potential threats.

- **Quantitative Risk Management:**

This approach uses data and statistical analysis to assess risks more objectively. It uses tools like Monte Carlo simulations to assign probabilities and calculate potential cost or schedule impacts.

4. Strategic vs. Operational Risk Management:

Strategic Risk Management: This approach focuses on high-level risks that could impact the organization's overall goals and objectives. It involves analyzing external factors like market fluctuations or technological advancements.

Operational Risk Management: This approach focuses on day-to-day risks that could disrupt project execution. It involves analyzing internal factors like resource availability or communication breakdowns. ^[2]

5. Technical vs. Schedule vs. Cost Risk Management:

- **Technical Risk Management:**

This approach focuses on risks related to project technology, equipment, or processes. It involves analyzing potential technical failures or delays.

- **Schedule Risk Management:**

This approach focuses on risks that could impact project timelines. It involves analyzing potential delays caused by resource constraints or unforeseen events.

- **Cost Risk Management:**

This approach focuses on risks that could impact project budgets. It involves analyzing potential cost overruns due to material price fluctuations or scope creep.

- **IN ESSENCE:**

By understanding these different types of risk management, project managers and organizations can develop a comprehensive strategy to address potential threats and ensure project success.

3.4.OPPORTUNITY: HOW TO AVOID RISK IN MANAGEMENT:

3.4.1. Opportunity Management:

Project management isn't just about steering clear of trouble (risks). It's also about identifying and capitalizing on potential benefits! This is where opportunity management comes in.

What is Opportunity Management?

Opportunity management is the process of actively searching for, evaluating, and capitalizing on chances to improve your project's success. It's about looking beyond the initial goals and recognizing possibilities that can add value, efficiency, or positive outcomes.

a. Objective of Opportunity Management:

In today's dynamic business environment, unexpected situations can arise. Opportunity management equips you to:

Maximize Project Benefits: By identifying new possibilities, you can extend the project's positive impact beyond its initial goals.

Enhance Innovation: A focus on opportunities encourages creative thinking and exploration of new approaches.

Improve Project Outcomes: Identifying and seizing opportunities can lead to faster completion times, reduced costs, or even exceeding project goals.

Increase Stakeholder Satisfaction: Proactive management of opportunities demonstrates a commitment to exceeding expectations.

b. The Opportunity Management Process:

Opportunity Identification: Actively seek opportunities throughout the project lifecycle. This involves brainstorming sessions, soliciting input from stakeholders, and monitoring project progress.

Opportunity Evaluation: Analyze each identified opportunity to assess its feasibility, potential benefits, and potential risks.

Opportunity Prioritization: Not all opportunities are created equal. Prioritize them based on their potential impact, alignment with project goals, and resource requirements.

Opportunity Development: Create a plan to capitalize on the chosen opportunities. This might involve allocating resources, assigning tasks, and establishing timelines.

Opportunity Monitoring and Control: Track the progress of your opportunity management efforts and make adjustments as needed.

c. Techniques for Opportunity Management:

Regular project reviews: Schedule time to reflect on project progress and identify potential opportunities.

Stakeholder engagement: Actively involve stakeholders in brainstorming sessions to capture a wider range of perspectives.

Lessons learned logs: Document past project experiences (both successes and failures) to identify opportunities for improvement in future endeavors.

Benchmarking: Compare your project's performance against industry best practices to identify areas for improvement.

- **IN ESSENCE:**

By incorporating opportunity management into your project management approach, you can transform your projects from simply meeting goals to exceeding expectations and achieving remarkable results.

3.4.2. Types of risks in management :

Risks in management can be categorized in several ways, depending on the specific area of focus. Here are some common classifications:

- **By Impact:**

-Strategic Risk: Strategic risks are those risks that could have a potential impact on a company's strategic objectives, business plan, and/or strategy. Adjustments to business objectives and strategy have a trickle-down effect to almost every function in the organization. Some events that could cause strategic risks to be realized are: major technological changes in the company, like switching to a new tech stack; large layoffs or reductions-in-force (RIFs); changes in leadership; competitive pressure; and legal changes.

-Operational Risk: Risks to operations, or operational risks, have the potential to disrupt daily operations involved with running a business. Needless to say, this can be a problematic scenario for organizations with employees unable to do their jobs, and with product delivery possibly delayed. Operational risks can materialize from internal or external sources employee conduct, retention, technology failures, natural disasters, supply chain breakdowns and many more.

- **By Source:**

-Internal Risks: These originate within the organization. Examples include employee turnover, lack of resources, or poor communication.

-External Risks: These originate from outside the organization and are often beyond its control. Examples include economic fluctuations, natural disasters, or changes in competitor strategies.

- **Additional Risk Catégories:**

-Compliance Risk:

Compliance risks materialize from regulatory and compliance requirements that businesses are subject to, like Sarbanes-Oxley for publicly-traded US companies, or GDPR for companies that handle personal information from the EU. The consequence or impact of noncompliance

is generally a fine from the governing body of that regulation. These types of risks are realized when the organization does not maintain compliance with regulatory requirements, whether those requirements are environmental, financial, security-specific, or related to labor and civil laws.

-Financial Risk:

Financial risks are fairly self-explanatory they have the possibility of affecting an organization's profits. These types of risks often receive significant attention due to the potential impact on a company's bottom line. Financial risks can be realized in many circumstances, like performing a financial transaction, compiling financial statements, developing new partnerships, or making new deals.

-Reputational Risk:

Reputational risks are an interesting category. These risks look at a company's standing in the public and in the media and identify what could impact its reputation. The advent of social media changed the reputation game quite a bit, giving consumers direct access to brands and businesses. Consumers and investors too are becoming more conscious about the companies they do business with and their impact on the environment, society, and civil rights. Reputational risks are realized when a company receives bad press or experiences a successful cyber-attack or security breach; or any situation that causes the public to lose trust in an organization.

-Security Risk:

Security risks have to do with possible threats to your organization's physical premises, as well as information systems security. Security breaches, data leaks, and other successful types of cyber-attacks threaten the majority of businesses operating today. Security risks have become an area of risk that companies can't ignore, and must safeguard against.

-Quality Risk:

Quality risks are specifically associated with the products or services that a company provides. Producing low-quality goods or services can cause an organization to lose customers, ultimately affecting revenue. These risks are realized when product quality drops for any reason whether that's technology changes, outages, employee errors, or supply chain disruptions.

3.4.3. Technique avoidance risks in management:

To avoid risks in management, various techniques can be employed based on the principles of risk management. These techniques include avoidance, retention, spreading, loss prevention and reduction, and transfer through insurance and contracts.

Avoidance: This technique involves identifying, evaluating, and avoiding risks that could lead to losses. For example, during a thunderstorm, vehicles may not be released for travel to avoid the risk of accidents.

Retention: Sometimes, it may be cost-effective to retain a portion of the risk based on its frequency and severity. For instance, the University may retain the risk of loss to certain structures like fences and light poles.

Spreading: Spreading the risk involves duplicating records and storing them in different locations to mitigate potential losses. Placing people in multiple buildings instead of a single facility can also help spread the risk of loss.

Loss Prevention and Reduction: When risks cannot be avoided, their impact can be minimized in terms of frequency and severity. For example, using security devices to deter theft reduces the risk of loss.

Transfer: Risk can be transferred to others through contracts, shifting the financial burden from one party to another. For instance, when outside organizations use University facilities, they must provide evidence of insurance, transferring the risk of the event to the facility user. By implementing these risk management techniques effectively, organizations can proactively address potential risks, minimize their impact, and ensure the continuity of their operations.

4. CONCLUSION :

Project management thrives on a delicate balance between safeguarding against potential pitfalls and seizing unforeseen advantages. Here's where risk and opportunity management come together to forge a winning formula for project success.

By integrating these two seemingly opposing forces, you create a dynamic and adaptable project environment. You're not just prepared for the expected, but also empowered to capitalize on the unexpected.

The outcome? Projects that not only meet their goals but potentially exceed them. You deliver on time, within budget, and with a keen eye for maximizing positive outcomes. Stakeholders are impressed, and team morale soars, creating a culture of success that carries over to future endeavors.

In essence, effective risk and opportunity management are the cornerstones of a robust project management strategy. By embracing both, you transform projects from simply meeting expectations to exceeding them, leaving a lasting impact on your organization and stakeholders.

CHAPTER 02:
PROJECT
PROFITABILITY
STUDY

In the realm of project management, success isn't just about achieving goals; it's about achieving them profitably. This is where the project profitability study enters the scene, acting as a powerful financial compass. This comprehensive analysis delves into the heart of a project's finances, meticulously evaluating its potential to generate a positive return on investment .

The project profitability study isn't merely a financial exercise; it's a strategic investment in a project's success. By embarking on this financial exploration, organizations gain the knowledge and confidence to navigate the uncharted waters of project finances and reach their profitability goals.

1. DEFINITION OF PROJECT PROFITABILITY:

Project profitability Defined by [**Harold Kerzner**] in Book: Project Management Essentials. As the positive financial outcome of a project after all costs associated with the project have been subtracted from the revenue generated by the project.

Approach profitability from a more general financial perspective. They define profitability as the ability of a business to earn a return on its investment." This definition can be applied to projects as well, where the "investment" is the total project cost and the "return" is the project's profit.by [**Eugene Brigham and Phillip Carpenter**] in Book: Fundamentals of Financial Management.

In conclusion we can Defined the project profitability can be defined as the cornerstone of project success. By understanding the factors that influence it and implementing strategies to improve it.

1.1.DEFINITION OF INVESTMENT :

The investment is the commitment of resources (financial, human, and technological) to a project or portfolio of projects with the expectation of achieving a specific outcome or set of benefits, Defined by [**Brenda Rodríguez Díaz**] (2013, Project Portfolio Management: A Strategic Approach)

The investment is the allocation of resources at the beginning of a project with the expectation of a future return, either tangible (financial) or intangible (knowledge, experience), defined by [**Evelyn P. Kirsch**] (1995, Project Management: A Logical Framework)

In conclusion investment can be seen as the allocation of financial resources across various assets to achieve a desired level of return while managing risk.

2. PROJECT PROFITABILITY EVALUATION :

2.1.Steps in a Project Profitability Study:

1-Define Project Scope and Objectives: Clearly outline the project's goals, deliverables, timeline, and resource requirements.

2-Identify Revenue Streams: List all potential sources of income the project will generate. This could include product or service sales, grant funding, subscriptions, licensing fees, or cost savings.

3-Estimate Project Costs: Identify and categorize all direct and indirect costs associated with the project. Direct costs involve materials, labor, and equipment directly used. Indirect costs encompass overhead expenses like rent, utilities, and administrative costs. Utilize historical data, industry benchmarks, and expert opinions to ensure accurate cost estimates.

4-Project Cash Flow Analysis: Create a timeline outlining the expected inflow (revenue) and outflow (expenses) of cash throughout the project lifecycle. This visualizes the project's financial health at different stages.

5-Profitability Calculations: Calculate the gross profit by subtracting total project costs from total revenue. Determine the net profit by factoring in any additional taxes or financing costs. Employ profitability metrics like Return on Investment (ROI) or Net Present Value (NPV) for a more in-depth analysis.

6-Sensitivity Analysis: Evaluate how sensitive the project's profitability is to changes in key variables like revenue, costs, or timelines. This helps assess potential risks and opportunities associated with these fluctuations.

7-Reporting and Recommendations: Prepare a comprehensive report summarizing the profitability analysis findings. Include key metrics, assumptions made, and sensitivity analysis results. Based on the analysis, provide recommendations regarding project approval, resource allocation, or potential adjustments to improve profitability. ^[1]

^[1] Pamela P. Peterson, Pamela Peterson Drake, Frank J. Fabozzi:Capital Budgeting Theory and Practice,2002 .P 105

2.2. Methods of project profitability

There are several methods used to evaluate project profitability, each with its own strengths and weaknesses. Here's a breakdown of some common methods:

- **Cost-Benefit Analysis (CBA):**

Concept: Compares the project's total costs to its total benefits, both tangible and intangible.

Strengths: Provides a comprehensive picture of project value, considering both financial and non-financial benefits.

Weaknesses: Assigning monetary value to intangible benefits can be subjective.

- **Return on Investment (ROI):**

Concept: Measures the project's profitability as a percentage of the total investment. (ROI = (Net Profit / Investment Cost) x 100%)

Strengths: Simple to calculate and understand, provides a clear picture of return on investment.

Weaknesses: Doesn't consider the time value of money (benefits received later might be less valuable than those received sooner).

- **Net Present Value (NPV):**

Concept: Takes into account the time value of money by discounting future cash flows to their present value. A positive NPV indicates a profitable project.

Strengths: Considers the time value of money, providing a more accurate picture of project profitability.

Weaknesses: Requires selecting a discount rate (which can be subjective) and can be complex to calculate.

- **Internal Rate of Return (IRR):**

Concept: The discount rate that makes the NPV equal to zero. Essentially, the IRR is the project's expected annual growth rate.

Strengths: Considers the time value of money and provides a single metric for project profitability.

Weaknesses: Can have multiple solutions (IRR) in some cases, making interpretation difficult.

- **Payback Period:**

Concept: The time it takes for the project's cumulative cash inflows to equal the initial investment.

Strengths: Easy to understand and calculate, good for projects with short lifespans.

Weaknesses: Ignores cash flows after the payback period and doesn't consider the time value of money.

We can choose the right method depends on several factors:

- **Project complexity:**

Complex projects might benefit from a more sophisticated method like NPV or IRR.

- **Data availability:**

Some methods (like CBA) require detailed data on intangible benefits that might not be readily available.

- **Project goals:**

If time to recoup investment is critical, the payback period might be a good choice.

Project profitability is a multifaceted concept influenced by various aspects that interact with each other. ^[1]

2.3.Aspect of project profitability:

- **Revenue Streams:**

-Identifying all potential sources of income the project will generate. This could include:

-Selling a product or service

-Grant funding

-Subscriptions

-Licensing fees

-Cost savings (by streamlining processes or reducing waste)

- **Project Costs:**

Accurately estimating all direct and indirect costs associated with the project. Direct costs include materials, labor, and equipment directly used in the project. Indirect costs encompass overhead expenses like rent, utilities, and administrative costs.

Here are some factors to consider for accurate cost estimation:

-Historical data from similar projects

-Industry benchmarks

-Expert opinions

Project complexity (more complex projects often have more unforeseen costs).

[1] Peter J. Sander, Janet Haley: Value Investing For Dummies;2011. P 201

- **Project Management Efficiency:**

-Effective project management practices minimize waste, optimize resource allocation, and ensure projects stay within budget. Here's how efficient project management contributes to profitability:

-Scope Management: Clearly defining project goals and deliverables prevents scope creep, which can lead to cost overruns.

-Resource Management: Effectively allocating and managing resources (human and material) ensures optimal utilization and minimizes waste.

-Risk Management: Proactively identifying and mitigating potential risks helps prevent cost overruns and project delays.

Schedule Management: Following a realistic project schedule keeps the project on track and reduces the need for last-minute adjustments that can be expensive.

- **Market Conditions:**

External factors like economic climate, competitor pricing, and customer demand can significantly impact project profitability. Here's how market conditions play a role:

-Economic Downturn: Reduced consumer spending might lead to lower demand for your project's output, impacting revenue streams.

-Competitive Landscape: If competitors offer similar products or services at lower prices, it can affect your ability to charge premium prices.

-Customer Demand: Understanding and responding to evolving customer needs ensures your project delivers value and remains profitable.

- **Financial Metrics:**

Employing calculations like gross profit, net profit, ROI, and NPV to assess the project's financial health.

- **Risk Management:**

Proactively identifying potential financial risks early on and developing mitigation strategies to minimize their impact. Here's how risk management contributes to profitability:

-Identifying Risks: These could include project delays, cost overruns, changes in market conditions, or resource availability issues.

-Developing Mitigation Strategies: Having plans in place to address potential risks helps prevent them from derailing project profitability.

-Contingency Planning: Allocating resources to cover unexpected events can safeguard project finances.

➤ IN ESSENCE:

By understanding and effectively managing these aspects, project managers can make informed decisions that enhance project profitability and contribute to the organization's overall financial success. Remember, project profitability is a dynamic concept, and these aspects are interrelated. A change in one area can influence others, so continuous monitoring and adjustments are crucial throughout the project lifecycle.

2.4.Objectives of project profitability:

The objectives of project profitability are multifaceted, aiming to ensure that your projects not only achieve their goals but also generate a positive financial return on investment (ROI). Here's a breakdown of some key objectives:

- **Informed Decision-Making:**

-By understanding the potential financial return of a project, you can allocate resources effectively, prioritize projects strategically, and ensure they align with your overall business goals.

-Project profitability analysis helps you assess if a project is financially viable before committing resources. This avoids investing in projects that might not generate sufficient returns.

- **Risk Management:**

-Project profitability analysis helps identify potential financial risks early on. These could include cost overruns, project delays, or changes in market conditions.

-By anticipating these risks, you can develop mitigation strategies to minimize their impact on your bottom line. This proactive approach safeguards project finances and profitability.

- **Optimal Pricing Strategies:**

-A clear understanding of project costs enables you to set optimal pricing models that ensure profitability while remaining competitive in the market.

-Project profitability analysis helps you identify the minimum price you need to charge to cover your costs and generate a desired profit margin.

- **Transparency and Accountability:**

-Profitability analysis fosters a culture of financial awareness within the organization.

-By understanding the financial implications of their decisions, project team members are more likely to be accountable for managing costs and contributing to project success.

- **Project Control and Forecasting:**

-By tracking project progress against financial benchmarks, you can identify potential deviations from the financial plan.

-This allows you to make informed adjustments as needed to ensure the project stays on track and profitable. Profitability analysis helps you monitor the project's financial health and course-correct if necessary.

- **Long-Term Sustainability:**

-Focusing on project profitability ensures the organization's financial health and sustainability in the long run.

-By consistently delivering profitable projects, you can generate financial resources to reinvest in future endeavors and support the organization's growth. [1]

➤ **IN ESSENCE:**

Project profitability is not just about making money on individual projects; it's about making strategic financial decisions that contribute to the organization's overall success and long-term viability.

3. APPROACHES OF PROJECT PROFITABILITY:

In project profitability analysis, there are two main approaches to assess financial viability: classical profitability analysis and actualization (sometimes referred to as discounted cash flow analysis). Here's a breakdown of each method and how they differ:

3.1. Classical Profitability Analysis:

This is a simpler method that focuses on the gross profit or net profit of the project over its lifespan. It's a straightforward calculation that provides a basic understanding of project profitability.

3.1.1. The classic profitability criteria:

a. The rate of profitability and the average rate of profitability (TR & TRM):

The profitability rate is a ratio which relates the net result and the VNC of the investment:

[1] Patrice Vizzavona: "financial management and forecasting analysis", 1996.P 85

$$TR = \frac{\text{Results of the year N}}{\text{VNC of Investment}}$$

$$TRM == \frac{\text{Average annual net profit}}{1/2 \text{gross investment}}$$

b. Decision rule:

For independent projects. We choose those with a TR higher than a subjective threshold set by management.

For the mutually exclusive project, we choose the project with the highest TR.

c. Advantages:

-Easy to understand and calculate.

-Requires minimal data compared to actualization methods.

-Useful for quick assessments or projects with short lifespans.

d. Disadvantages:

-Doesn't consider the time value of money. A dollar today is worth more than a dollar received in the future due to factors like inflation and potential investment opportunities.

-Ignores the cash flow pattern throughout the project lifecycle. Projects might have upfront costs with revenue spread out over time.

e. Recovery time (RD):

As the name suggests, payback is the time necessary so that the sum of the cash flows associated with the project allows you to refund your initial stake.

The year of recovery is year T, in which the accumulation of flows of cash flow becomes positive. ^[1]

$$\sum_{n=0}^T FT_n > 0$$

When cash flows are constant, the payback period is understood by the following formula:

$$DR = \frac{I_0}{FT}$$

I_0 : initial investment expenditure

FT : net cash flow.

f. Decision rule:

- For independent projects we choose those with a deadline of recovery below a subjective threshold previously set by the management according to its constraints, particularly financing.
- For mutually exclusive projects, we choose the project with the deadline smallest recovery.

g. Advantages of the method:

- Easy to understand and apply, sometimes important elements for SME managers;
- provides a simple (albeit imperfect) way of assessing the “risk” of a Project by the immobilization time of the financial resources that it trains; trains.
- The more liquid a project is, the less risk it is.
- Adapts to the context of capital rationing, because it makes it possible to distinguish projects that quickly generate cash inflows.

h. Disadvantages of the method:

- The payback period ignores the timing of cash flows.
- The DR no longer considers cash flows once the stake is funds have been recovered,
- The choice of the threshold to be respected for independent projects is arbitrary, the payback period is intended to be a rough indicator of risk.

Indeed, the shorter the period, the lower the investment risk. It does not take into account the uncertainty linked to the estimation of cash flows, it only allows you to compare similar projects.

3.2.Actualization (Discounted Cash Flow - DCF) Analysis:

This is a more sophisticated method that takes into account the time value of money. It considers the cash inflows and outflows of the project over time, discounting future cash flows to their present value. This provides a more accurate picture of project profitability, especially for projects with long lifespans or uneven cash flows.

a. the core concept:

- A dollar received today is worth more than a dollar received in the future. The discount rate reflects this time value of money.
- The project's cash flows are discounted back to their present value using the chosen discount rate.
- The Net Present Value (NPV) is calculated by summing the discounted cash flows. A positive
- NPV indicates a profitable project

b. Advantages:

Considers the time value of money, providing a more accurate profitability assessment.

Takes into account the cash flow pattern throughout the project lifecycle.

c. Disadvantages:

More complex to calculate than classical methods.

Requires selecting a discount rate, which can be subjective and impact the NPV calculation.

➤ **When to Use Each Method**

Classical Profitability Analysis: Suitable for:

-Simple projects with short lifespans.

-Quick assessments where time value of money is less critical.

Actualization (DCF) Analysis: Recommended for:

-Complex projects with long lifespans.

-Projects with uneven cash flows.

-Situations where considering the time value of money is crucial for accurate decision-making.

➤ **IN ESSENCE:**

Both classical profitability analysis and actualization (DCF) methods play a role in project profitability assessment. Understanding the strengths and weaknesses of each approach allows project managers to choose the most appropriate method for their specific project and make informed decisions that maximize financial success.

3.2.1. Definition of discount rate:

By definition, the discount rate is a central financial concept for assessing the present value of a future cash flow or series of future flows. It reflects the fundamental idea that an amount of money today is worth more than the same amount received at some future point, because of its potential return over time. This principle is crucial for making informed investment decisions, allowing companies and investors to assess the profitability of projects and investments by taking into account both time and risk. ^[1]

3.2.2. the uses of the discount rate:

The use of the discount rate is fundamental in finance and project management for several crucial reasons

[1] These: Thomas Wittenmeyer; Graduate of ESSEC Business School.
Under the direction of Pierre Aïdan, doctor of law and graduate of Harvard.

This tool makes it possible to approach the challenges inherent in investment evaluation and strategic decision-making in a pragmatic and informed manner. Here's why, for example, the discount rate is so widely used and valued in the financial world and beyond:

-A comparison of values over time. Without discounting, comparing future cash flows to current costs would be like comparing apples and oranges, due to the time value of money. Discounting makes these values comparable, allowing a precise evaluation of investment projects;

-An assessment of the profitability of projects. By discounting future cash flows, investors and managers can calculate the net present value (NPV) of a project, which is a key indicator of its profitability. A project is generally considered viable if its NPV is positive, indicating that the expected returns exceed the cost of the initial investment adjusted for time and risk.

-Taking risk into account. By adjusting the rate to reflect the level of risk, investors can assess whether potential returns adequately compensate for that risk. A riskier project will require a higher discount rate to be considered profitable, reflecting the opportunity cost of the funds invested.

-Optimization of resource allocation decisions. By evaluating and comparing the NPV of different projects or investments, decision-makers can prioritize those that maximize shareholder value.

-An evaluation of investment alternatives. By discounting future cash flows from different projects or financial assets, investors can identify options that provide the best risk-adjusted return for their portfolio.

-Taking into account inflation. By incorporating a rate that reflects inflation expectations, investors and managers can ensure that a project's future returns are assessed in terms of real monetary value.

-A long-term financial strategy. By using discount rates to evaluate investments, companies can align their capital expenditure decisions with their long-term financial goals, ensuring sustainable growth and profitability. ^[1]

5.1.1. Calculate the discount rate:

Calculating the discount rate is a key step in financial evaluation, making it possible to determine the present value of future cash flows. The formula for calculating the assessment rate may vary depending on the purpose of the assessment, the type of project or investment, and the information available.

The table summarizes the preferred calculation methods:

CALCULATION METHOD	DESCRIPTION
Weighted Average Cost of Capital (WACC)	Weighted average of the cost of equity and the cost of debt, adjusted for the financial structure of the company.
Required Rate of Return	Rate of return that investors expect from the investment, taking into account the risk. Can be calculated from models like MEDAF.
Risk-Free Rate Adjusted for Risk	Portion of the risk-free rate, such as the yield on government bonds, plus a risk premium specific to the investment.
Cost of Debt	Interest rate the company pays on its debt, adjusted to account for the tax benefit of deductible interest.
Historical Analysis	Deriving the discount rate from an analysis of historical returns on similar investments, adjusted for current conditions.

Source Under the direction of Pierre Aidan, doctor of law and graduate of Harvard.

3.1.1. Analyze the discount rate :

Analyzing the discount rate involves careful evaluation of several key factors that directly influence the net present value (NPV) of investment projects and, therefore, financial decisions. Here are the factors in question:

- Market rates.** This involves checking the discount rate for consistency with current interest rates and comparable investment returns, and assessing whether the rate adequately reflects market conditions and economic expectations;
- The sensitivity of the NPV.** To do this, a sensitivity analysis must be carried out to observe how variations in the discount rate affect the net present value (NPV) of the project. It is also important to identify projects whose profitability is particularly sensitive to rate changes, potentially signaling higher risk;
- The risk.** It is key to examine whether the discount rate properly incorporates all risks associated with the project, including market risk, project-specific risk, and credit risk. Just as it is recommended to ensure that the discount rate reflects the opportunity cost of capital committed, taking into account the best available investment alternative;

-Inflation. The method recommends analyzing the effect of inflation on the discount rate used, to ensure that future cash flows are valued in terms of current purchasing power. Then the discount rate should be adjusted to reflect inflation expectations, ensuring an accurate assessment of real returns;

-The duration of the project. Considering the duration of the project when evaluating the discount rate is essential, as long-term projects may warrant a higher rate due to increased uncertainty. Just like adapting the discount rate according to the maturity of the cash flows, recognizing that long-term cash flows are more uncertain;

-Strategic objectives. The goal is to ensure that the discount rate is aligned with the organization's long-term financial and strategic goals. This requires using a rate that supports an efficient allocation of resources, favoring investments that maximize shareholder value. This structured approach allows for comprehensive discount rate analysis, ensuring that investment decisions are based on a robust and comprehensive assessment of costs, risks and opportunities.

In conclusion

By understanding the importance of project profitability, carefully considering the factors that affect it, and implementing strategies and methods to maximize it, organizations can make informed decisions about project selection and ensure their projects contribute to their overall financial success.

INVESTMENT

Project profitability and investment are intricately linked. When evaluating a project, you essentially weigh the financial resources you'll invest against the potential returns you expect to generate.

At the heart of a company's continuity and growth lies the strategic acquisition of tangible and intangible assets, commonly known as investment. "Investing is spending today with the hope of gaining more tomorrow" encapsulates this essence. This definition underscores the temporal aspect (today and tomorrow), the inherent risk, and consequently, the notion of profitability. The crux of the matter isn't just about mechanically applying methods, but truly grasping the intricacies of investment processes. This chapter aims to unravel the complexities by providing clear definitions and concepts related to investment and project conception, along with an exploration of various financing avenues for investment projects.

1. IMPACT OF INVESTMENT ON PROJECT PROFITABILITY:

- **Higher Investment:** Generally, projects requiring a larger upfront investment will take longer to recoup costs and might have higher risks associated with them. However, these projects also have the potential for significantly higher returns if successful. Here are some examples of how investment can impact profitability:
- **Research and Development (R&D):** Large investments in R&D can lead to breakthroughs and innovative products that generate substantial profits in the long run.
- **Infrastructure Projects:** Building new transportation systems or communication networks requires significant investment but can improve efficiency and profitability across various industries in the long term.
- **Lower Investment:** Projects with lower upfront investment costs might reach profitability faster and carry less risk. However, they may also have limitations on potential returns. Here are some examples:
- **Process Improvement Projects:** Streamlining internal processes with minimal investment can yield quick profitability gains by reducing costs.
- **Software Development:** Developing a new software application with a smaller budget might have a faster time-to-market and generate profits sooner.

2. EVALUATION AND CHOICE OF INVESTMENT:

As highlighted, evaluating and choosing the right investments is paramount for project success. To achieve this, we'll employ a three-pronged approach that analyzes the project from various perspectives:

2.1. Economic Technique :

This step is all about the numbers. We'll delve into the financial viability of the investment, analyzing cash flows, profitability, and potential risks. Here's a breakdown of the key areas to analyse:

➤ Project Cash Flows:

This involves estimating the expected inflows and outflows of cash associated with the investment over its entire lifespan. We'll need to consider:

Initial Investment Costs: This includes all expenses incurred before the project starts generating revenue, such as land acquisition, equipment purchase, and construction costs.

Operational Expenses: These are the ongoing costs associated with running the project, such as labor, materials, utilities, and maintenance.

Projected Revenues: This is an estimate of the income the project will generate throughout its operational life.

➤ Profitability Analysis:

Once we have a grasp of cash flows, we can employ various techniques to assess the project's potential profitability. Some common methods include:

Net Present Value (NPV): This metric discounts all future cash flows to their present value, providing a clear picture of the project's overall profitability. A positive NPV indicates a profitable investment.

TABLEAU: Calculation of the NPV according to the types of investments Source

Types of investments	NPV formula
Points input output (PIPO)	$NVP = \sum_{n=1}^N \frac{FT_n}{(1+i)^n} - I_0$
Points input-continuous output (PICO)	$NVP = \sum_{n=1}^N \frac{FT_n}{(1+i)^n} - \sum_{n=1}^{N-1} \frac{I_n}{(1+i)^n}$
continuous input-cont output (CICO)	$NVP = \sum_{n=1}^N \frac{FT_n}{(1+i)^n} - I_0$
Continuous count Output (CISCO)	$NVP = \sum_{n=1}^N \frac{FT_n}{(1+i)^n} - I_0 - \sum \frac{I_n}{(1+i)^n} -$

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CHAPTER 02: PROJECT PROFITABILITY STUDY

Internal Rate of Return (IRR): This is the discount rate that makes the NPV equal to zero. Essentially, it's the annualized return on investment the project is expected to generate.

$$NVP = \sum_{n=0}^N \frac{FT_n}{(1+i)^n} - I_0 = 0 \quad \text{such that } i = \text{IRR}$$

Payback Period: (profitability index) this metric calculates the time it takes for the project to recover its initial investment from the generated cash flow. [1]

TABLEAU: calculation of IR according to different types of investment

Types of investments	NPV formula
Points input output (PIPO)	$IR = \frac{FT(1+i)^{-N}}{I_0}$
Points input-continuous output (PICO)	$IR = \frac{FT(1+i)^{-N}}{\sum_{n=1}^N It(1+i)^t}$
continuous input-point (CICP)	$IR = \frac{\sum_{n=1}^N FT(1+i)^{-N}}{I_0}$
Continuous input Continuous Output (CISCO)	$IR = \frac{\sum_{N+1}^N FT(1+i)^{-N}}{\sum_{t=1}^T It(1+i)^{-t}}$

Source patrice Vizzavona: gestion financière

➤ Risk Analysis:

Financial viability isn't just about potential profits; it's also about managing risks. Here, we'll identify and evaluate potential threats that could impact project cash flows and profitability. This might involve:

Sensitivity Analysis: This technique assesses how changes in key assumptions (eg, sales volume, project costs) can affect profitability metrics.

Scenario Planning: This involves developing different potential future scenarios (eg, economic downturn, market changes) and analyzing their impact on the project.

2.2. Opportunity Evaluation :

While financials are important, they don't tell the whole story. Here, we'll broaden our lens to assess the project's fit within the bigger picture. This includes evaluating the location's suitability, competitive landscape, and potential social and environmental impacts. Here are some key aspects to evaluate:

➤ Location:

Choosing the right location is crucial. We'll need to assess factors like:

Proximity to Markets: Being close to your target customers can reduce transportation costs and improve delivery times.

Availability of Resources: Ensure the location has access to the necessary resources, such as skilled labor, raw materials, and utilities.

Infrastructure: Adequate transportation networks, communication systems, and energy infrastructure are essential for smooth operation.

Regulatory Environment: Understanding local regulations and obtaining necessary permits can impact project timelines and costs.

➤ **Competition:**

A comprehensive analysis of the competitive landscape is vital. This involves:

Identifying Existing Competitors: Who are the main players in the market, and what are their strengths and weaknesses?

Competitive Advantage: What makes your project unique and how will it differentiate itself from competitors?

➤ **Social and Environmental Impact:**

Consider the potential social and environmental implications of the project, both positive and negative. This might involve:

Job Creation: Will the project create jobs in the local community?

Environmental Impact: Could the project have negative consequences for the environment? How can these be mitigated?

2.3. Market Study :

Finally, we'll shift our focus to the market itself. Understanding the target audience, market trends, and developing a winning marketing strategy are crucial for ensuring your project resonates with the right people. This step involves:

Target Audience: Who are you trying to reach with your project? Clearly define your ideal customer profile in terms of demographics, needs, and pain points.

Market Demand: Is there a sufficient demand for the project's outputs (products or services) in the target market? Analyze market size, growth potential, and trends.

Market Trends: Identify current and future trends in the market that could impact the project's success. This might involve technological advancements, changing consumer preferences, or economic factors.

Marketing Strategy: Develop a plan to reach your target audience and effectively position your project. This might involve considering elements like pricing strategy, distribution channels, and promotional activities. ^[1]

[1] Harold Kerzner : Strategic Project Management . P 102

3. IMPORTANCE OF INVESTMENT DECISION IN PROJECT INVESTMENT:

Within the realm of project investment, making sound investment decisions is paramount for success. These decisions hold the power to shape the financial viability and long-term impact of your project here's a breakdown of why investment decisions are critical in project investment:

- **Financial Security and Growth:**

Investing in the right projects fosters financial security for the project itself. A project with a positive NPV indicates an investment that will create financial value.

- **Strategic Alignment:**

Investment decisions shouldn't be made in isolation. They should strategically align with the overall objectives of your project.

- **Risk Management:**

Investment decisions play a vital role in managing potential risks associated with a project. By carefully evaluating opportunities, you can identify potential threats that could impact project finances and profitability.

4. COMPLEXITY OF INVESTMENT DECISION:

Project investment decisions are inherently complex, requiring careful consideration of various factors beyond just financial numbers. Here's a breakdown of the key elements that contribute to this complexity:

- **Uncertainty and Future Predictions:**

Market Fluctuations: Financial markets are constantly in flux, influenced by economic conditions, political events, and unexpected circumstances. Predicting future performance can be challenging, making it difficult to accurately assess the potential returns on investment for a project.

Technological Advancements: The rapid pace of technological change can disrupt entire industries and render certain project investments obsolete. Accurately forecasting the impact of future technological advancements adds another layer of complexity.

- **Information Asymmetry and Incomplete Data:**

Limited Information: Project managers may not have access to all the information necessary to make a fully informed investment decision.

Information Overload: In today's information age, there can be an overwhelming amount of data available. The challenge lies in identifying the most relevant and reliable information to inform the investment decision.

➤ **Human Factors and Behavioral Biases:**

Overconfidence and Optimism: Project managers may be overly optimistic about the potential success of a project, leading to underestimation of risks and overestimation of returns.

Sunk Cost Fallacy: The tendency to continue investing in a project simply because of past investments, even if the project is no longer viable.

Risk Aversion: Some project managers may be overly risk-averse, leading them to miss out on potentially profitable investment opportunities.

➤ **Project-Specific Considerations:**

Project Uniqueness: Each project has its own unique characteristics and complexities. A “one-size-fits-all” approach to investment decisions won’t work. The evaluation process needs to be tailored to the specific project at hand.

Long-Term Horizon: Project investments often have a long-term horizon, requiring consideration of factors that may play out over years or even decades.

➤ **Strategies for Managing Complexity:**

Comprehensive Research and Analysis:

Conduct thorough research to gather as much relevant information as possible. Utilize financial analysis techniques like NPV and IRR, but also consider market trends and potential disruptions.

Scenario Planning:

Develop different potential future scenarios to assess how the project might perform under various circumstances.

Teamwork and Diverse Perspectives:

Involve a team with diverse expertise in the decision-making process. This can help mitigate biases and ensure a more comprehensive analysis.

Flexibility and Risk Management:

Acknowledge the inherent uncertainty and be prepared to adapt the investment strategy as new information emerges. Implement risk management strategies to mitigate potential negative impacts. [1]

5. THE OBJECTIVES OF AN INVESTMENT PROJECT:

The objectives of an investment project can be strategic or operational.

Strategic objectives:

It is a set of objectives that usually falls within the strategic sphere. It can be the subject of exploitation, modernization, independence, etc. The coordination and prioritization of these objectives will allow the definition of the strategy related to the investment.

Operational objectives:

This objective is located at the technical level, we can cite three essential objectives of an investment project.

a) Cost Objective:

Cost reduction is the main objective of many investment projects, because it is an element of capital that allows room for maneuver in terms of pricing policy. Prices are largely influenced by costs. The objective of the cost policy and to reduce as much as possible the production costs.

b) Deadline objective:

Any project may have as its main objective to satisfy a recently appeared demand, as soon as possible in order to acquire a competitive advantage.

Indeed, in a market with intense competition, shares return better, and especially faster than the competition, thus influencing purchasing habits. This partly explains the fact that some products launched late fail even if they are of better qualities.

c) Objective of Quality:

The company must guarantee a certain level of quality which is essential to position itself in a demanding competitive environment. To this end, the achievement of this objective obliges the company to devote much more time and consequently more costs, which contradicts the two objectives mentioned above (cost-delay). So, she will be forced to exclude them, because their coexistence is difficult or even downright impossible. ^[1]

6. TYPE OF INVESTMENT:

At the end of the economic analysis of the investment, we can distinguish different types of classification:

By accounting nature:

Investments by their nature make it possible to establish a classification, which is close to the accounting classification, there are three categories of investment:

[1] HOUDAYER.R : Evaluation financière des projets: Ingénierie de projet d'investissement, 2ème Edition ECONOMICA, France, 1999, p.13

a) Corporeal investments:

These are the physical goods, that is, the fixed assets of the enterprise. For example: land, buildings, equipment, technical installations and machinery, etc.

b) Intangible investments:

These are technical investments (example: business assets, patents and licenses, research and development program, etc.

c) Financial investments:

These are the acquisitions of debt rights or financial rights. Example: the titles equity securities, other real estate securities, etc.

By objectives:

We distinguish several types that are most encountered by the company during its activity

a) Productivity Investments:

Productivity investments refer to investments made to reduce production costs and improve yields. These projects can take a wide variety of forms: new equipment, new manufacturing processes or new production organization.

b) Replacement investments:

Designate the projects whose priority objective is to allow a renewal of the equipment in place, if the strict definition of J.Deam "identical investment" is difficult to envisage in an economy marked by technical progress, a more flexible design considers as renewal investment an investment to satisfy the same needs is quite operational.

c) Expansion Investments:

These are intended to allow the company to cope with the growth of external demand (market demand), either by launching new products in order to increase revenues, or by developing production.

d) Strategic investments:

This is the case of expenses in the context of research and development, staff training, it can have two categories: - Defensive character to protect the company against market evaluation. Offensive character so that the company remains at the forefront of technology in its field.

e) Capacity Investments:

Designate projects intended to allow an increase in the company's production capacities, they can respond to expansion strategies (increase in the quantities produced with the objective of gaining market share).^[1]

By the nature of their relationships:

According to this classification, an investment project has a main aspect which consists in asking how a project will influence or be influenced by other projects. Investments are classified: independent investments and dependent investments.

a) Independent Investments:

The investment is independent when the choice of one of the investments will not exclude the choice of the other. That is, projects can be analyzed separately. For example: acquisition of a truck, a machine tool.

b) Dependent investments:

They are of two types: mutually exclusive investment and contingent investment.

By the risk:

We distinguish:

a) Low-risk Investments:

It is about renewal investments as well as productivity because the Characteristics and effects of these investments are known. Investments in productivity renewal have the effect of keeping the company in its current state. Productivity investments have the effect of an increase in productivity.

b) Very risky investments:

These are capacity investments, and innovation investments because they are intended to modify the current state of the company. These investments therefore take the company from the known to the unknown.

7. METHODS AND STRATEGIES OF INVESTMENT:

Methods and strategies of investment encompass a variety of approaches designed to achieve specific financial goals while managing risk. Some common methods include:

-Asset Allocation: Spreading investments across different asset classes (stocks, bonds, real estate, etc.) to optimize risk and return.

-Diversification: Investing in a variety of assets within each asset class to reduce the impact of any single investment's performance on the overall portfolio.

-Value Investing: Identifying undervalued assets based on fundamental analysis to capitalize on potential long-term growth.

-Growth Investing: Focusing on assets with strong growth potential, often characterized by high earnings growth rates and expanding markets. **Income Investing:** Seeking assets that generate regular income, such as dividend-paying stocks or bonds.

-Market Timing: Attempting to buy and sell assets based on predictions of short-term price movements, although this strategy can be risky and difficult to execute consistently.

-Buy and Hold: Holding onto investments for the long term, aiming to ride out market fluctuations and benefit from compound interest and long-term growth.

-Active vs. Passive Investing: Active investors aim to outperform the market by actively managing their portfolios, while passive investors seek to match the market's performance by investing in index funds or ETFs.

Ultimately, the choice of method and strategy depends on factors such as investment goals, risk tolerance, time horizon, and market conditions.

8. DIFFERENT STAGES OF A PROJECT:

The stages of the project also called project cycle cover the entire process that goes from the launch of the project idea to its preparation, evaluation, decision-making and then execution.

They are called cycles because one phase naturally leads to the next and it is often necessary to return to a previous phase, during the course of operations over time.

❖ The identification phase :

Among the objectives of the identification are:

- the project idea is the technically, financially and economically viable one ;
- ensure that other resources can reasonably continue to be devoted ,
- give an order of magnitude of the necessary financial needs; Among the economic motivations and from which the project idea often emanates of the public authorities, we note :
- The improvement of the balance of foreign trade (reduction of imports, increase in exports...)
- the supply of local industries with raw materials ;
- Regional development, and job creation.

The aspects to be appreciated at the level of this phase:

- The national priority: to appreciate the different solutions that make it possible to achieve this objective.
- Technical feasibility: ensure that the project is technically feasible; see also the different solutions that may be available ;
- Economic feasibility: ensure that the project is economically viable (currency balance, jobs, regional balance...).
- Identification of problems: it is a question of identifying the problems that may arise even if it is not a question of solving them during this phase (organization, gestation, financial aspects, institutional pricing policies, taxation, etc.), marketing.

❖ The preparation phase:

The objectives of the preparation phase are:

- Develop, complete and confirm the proposals formulated at the identification stage;
- Quantify the cost of the various investment and operating items;
- Financially and economically analyze the chosen variant.
- The preparation of the project which must lead whenever possible to the determination of several variants (that is to say several possibilities), will have to follow the following process:
 - Market research.
 - Technical studies.
 - Estimation of investment and operating costs.
 - Choice of the most appropriate variants.

Market study:

- The purpose of the market study will be to answer the following questions:
 - What quantities can we consider producing and at what price? Will this production be able to be sold? (This results in the estimation of the receipts).The concepts of price and quantity are generally linked.
 - What are the general conditions for marketing the product?
 - What will be the evolution over time of the various factors we have just mentioned (consumption level and prices)?

Technical studies:

Technical conditions for the realization of the project, duration of the work, possible location, process used, needs for raw materials, water, energy, labor, equipment to be considered.

Investment costs, income and operating expenses:

The technical study must be associated with an analysis of expenses and revenues for each of the solutions envisaged: cost of equipment, cost of labor, raw materials, energy, operating revenues as well as the possible evolution of these parameters.

Legal, fiscal and financial conditions:

We will define the assumptions, in particular fiscal and financial, from which the calculations are conducted. Simplified assumptions will be Sufficient for the former.

Management and human resources:

Necessary supervision and qualified manpower.

❖ The evaluation phase:

The evaluation consists of reviewing all the investment data and choosing a variant from among those selected.

Two fundamental questions then arise from the point of view of the community and from the point of view of the company for a given project. (The answers to these two questions may differ depending on the point of view adopted).

Among the various possible solutions, which is the most interesting or the most profitable? Is the most profitable solution sufficiently profitable to justify a decision to move forward, given the investment opportunities in other areas and the shortage of capital, foreign exchange and skilled labor. The answer to these two questions presupposes the definition of choice criteria making it possible to quantitatively measure the value of one project compared to another.

The criteria having been chosen, the profitability calculations will be carried out which will integrate as much as possible the external constraints.

The evaluation consists of checking the results announced at the end of the preparation phase. It will focus on two main components: Technical and economic analysis; Financial analysis.

❖ The decision :

Those responsible will then be able to make a reasoned decision with full knowledge of the facts. Three decisions are possible:

The refusal of the project: at least as long as no important new elements (new technology, new markets) appear.

The decision to continue the studies, either to obtain more precise information (for example to make a more detailed analysis of investment costs), or to study new variations whose interest would have appeared during the examination of the file

The outright acceptance of a variant of the project, in which case we can proceed to the next step.

❖ The execution phase :

This is the culmination of the whole process. This is the stage of the construction of works, the acquisition of equipment, in short, the provision of funds necessary for the realization of the project. Choices will then have to be made for the partners who must ensure the realization of the constructions, suppliers from whom the various necessary equipment will be acquired... etc.

❖ The post-evaluation :

In order to benefit from the experience gained, it is necessary to evaluate the results of a project retrospectively. Empirical surveys carried out in certain countries have shown that very often the revenues, deadlines and actual costs of projects are different from the estimates established during the pre-evaluation phase. The time required for the project to become profitable or cease to be loss-making can also be misjudged. It is clear that an a posteriori evaluation of projects can reveal the causes of the weakness of the initial estimates and make it possible to avoid the subsequent repetition of the same errors. [1]

➤ **IN ESSENCE:**

The specific stages and their associated activities may vary depending on the project methodology used (e.g., Waterfall, Agile) and the project's nature and complexity.

By following a structured approach with well-defined stages, project managers can increase their chances of delivering projects on time, within budget, and meeting all the set goals.

9. CONCLUSION:

In conclusion, the investment section provides a comprehensive overview of its impact on project profitability, emphasizing the importance and complexity of investment decisions. It delves into various aspects, including objectives, typology, methods, and strategies, while outlining the stages involved in studying an investment project. Understanding these elements is crucial for making informed investment choices and maximizing project success.

And the importance of project profitability, carefully considering the factors that affect it, and implementing strategies to maximize it, organizations can make informed decisions about project selection and ensure their projects contribute to their overall financial success.

By understanding the relationship between project profitability and investment is essential for making sound financial decisions and implementing these strategies, project managers can make informed investment decisions, optimize resource allocation, and increase the probability of achieving project profitability. Remember, profitability is not just about immediate financial gains; it's about making strategic investment decisions that contribute to the organization's long-term financial health.

CHAPTER 03 :
PRACTICAL
PORTION

1. INTRODUCTION:

Naftal is the principal company selling petroleum-based fuels for domestic consumption in Algeria; its gas stations are a familiar sight throughout the country. Founded in 1981 by government decree, it was responsible for refining and distribution until 1987.

Naftal's status as a state-owned enterprise makes it a relevant case study. You could examine its operations, contributions to the economy, and potential government influences.

In this chapter, we will try to explain in a practical framework what is the process followed by the Naftal company to carry out these investment projects and the management risks. Thus, highlighting the elements developed in the preceding chapters, an illustration by a practical case is necessary. For this, we chose a study of a management project already handled at the Naftal company level, which concerns a study on management risks and how to avoid and study applying the Opportunity of a management project.

This section is dedicated to the presentation of the company through titles which explains how Naftal's working method.

2. COMPANY PRESENTATION :

NAFTAL is a joint stock company (Spa), a 100% subsidiary of the Holding Sonatrach Valorisation des Hydrocarbures (SVH)

Head office: Route des dunes, Chéraga – Algiers

Share capital: 165,000,000,000 DA

Social object :The marketing, storage, transport and distribution of petroleum products and derivatives in particular, Fuels and Lubricants including those intended for Aviation & Marine, LPG, solvents, aromatics, paraffins, bitumens and tires.

Naftal is the dominant force in Algeria's petroleum distribution sector. They play a critical role in ensuring the country has access to essential fuels throughout the nation. In this presentation, we will explore Naftal's history, core operations, and its significance to Algeria's economy.

Naftal's story began in 1981 when the Algerian government established the company. Initially, Naftal shouldered the responsibility for both refining petroleum and distributing the refined products throughout Algeria. In 1987, Naftal's focus shifted solely to distribution as Sonatrach assumed all refining operations. Today, Naftal remains a wholly owned subsidiary of Sonatrach.

In conclusion, Naftal stands as a pillar of the Algerian economy. Their extensive network of gas stations.

2.1. THE COMPANY'S RESOURCES :

a. Human resources of the company:

List of Members of the Society Planning Committee:

- The Executive Director Strategy, Planning & Economy
- The Executive Director of Finance
- The Central Health, Safety & Environment Director
- The Project Management & Development Director
- The Transport & Maintenance Director
- The Corporate Planning Director/ DE.SPE
- The Director of Studies & Planning / Br.CBR
- The Director of Studies & Planning / Br.COM
- The Director of Studies & Planning / Br.GPL
- The Director of Studies & Planning/DE.RH
- The Director Foresight & Economic Studies / DE.SPE
- The Costs & Budget Director/ DE.F
- The Operations Director / OC.SI

The technical secretariat of this Committee is provided by an executive from the Corporate Planning / DE Department. EPS.

List of Planning Committee Members:

Marketing branch

- The Director of the Marketing Branch
- The Director of Studies & Planning
- The Network Director
- The Bitumen Director
- The Finance & Accounting Director
- The Network Development Director
- The Technical Director & Network Maintenance
- The Technical & Transport Director LPB
- The Lubricants & Tires Director
- The Head of the Planning/D. Studies & Planning Department

CHAPTER 03: PRACTICAL PORTION: NAFTAL COMPANY

The technical secretariat of the Marketing Branch Planning Committee is provided by an executive reporting to the Studies & Planning Department of the Marketing Branch.

List of Planning Committee Members:

Fuels Branch

- The Director of the Fuels Branch
- The Director of Studies & Planning
- The GRTS Fuels Activities Director
- The Finance & Accounting Director
- The Technical & Maintenance Director
- The Development Director
- The Aviation Director
- The Marine Director
- The Operations Director
- The Head of the Planning/D. Studies & Planning Department

The technical secretariat of the Fuels Branch Planning Committee is provided by an executive reporting to the Studies & Planning Department of the Fuels Branch.

List of members of the Planning Committee:

LPG branch

- The Director of the LPG Branch
- The Director of Studies & Planning
- The Director of GRTS GPL Activities
- The Finance & Accounting Director
- The Technical & Maintenance Director
- The Development Director
- The Operations Director
- The Kegging & Marketing Director
- The Head of the Planning/D. Studies & Planning Department

The technical secretariat of the LPG Branch Planning Committee is provided by a manager reporting to the Studies & Planning Department of the LPG Branch.

(See Annexe01)

b. material resources of the company

Based on the information of the company here's the material means:

Clean means of transport:



Transport fleet: 3,600 units



Pipelines: 730 km in operation and 583 km under construction:

-Skikda-Khroub-El Eulma (208 km)

(Concentrated works in progress)

- El Eulma-BBA-Bouira-Algiers (375 km) (Study of the route finalized)



5 Bars including one chartered (Bunker capacities: 7,800 tonnes)

Information and operating systems:

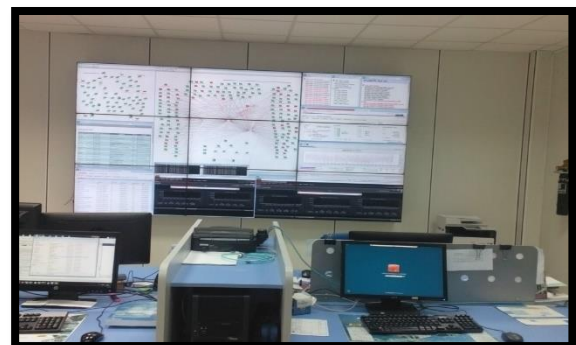
NAFTAL has an information system composed of:

Management IT systems:

For the automation needs of its business and Support functions.

Communication network:

To facilitate the circulation and sharing of data, Their consolidation at the Data Center level.



2.2. THE COMPANY'S WORK ORGANIZATION CHART:

a. The Management and Strategic Management Presidency of the company:

Functional Structures:

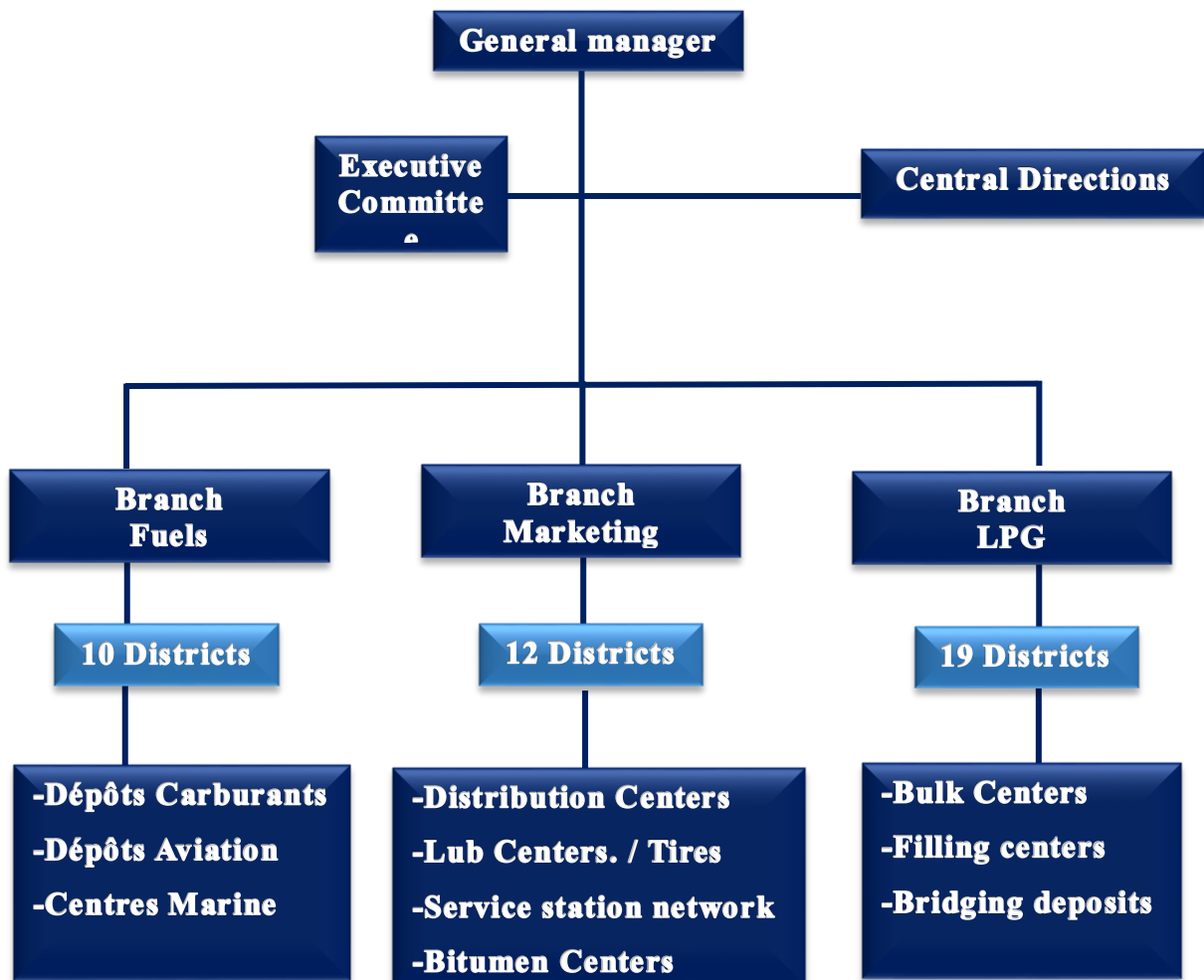
- Develop the Company's strategies and policies.
- Ensure overall coordination and coherence.
- Provide expertise and support to operational structures.
- Ensure control and monitoring.

Operational Structures:

-Three (3) Branches of activity exercise responsibility for the Company's businesses, in a decentralized manner.

b. Organization Chart:

We will inform you about the organizational system of the Naftal Company. This structure is a hypothetical model based on available information about Naftal.



2.3. COMPANY ACTIVITIES:

In the Naftal company: we can distinguish four types of activities: Operational activities. Fuel activities. LPG activities and commercialization one. **Operational Activities**

Naftal's operational activities are the engine that keeps Algeria fueled. Here's a breakdown of the key functions that ensure a steady flow of petroleum products to consumers and businesses across the country:

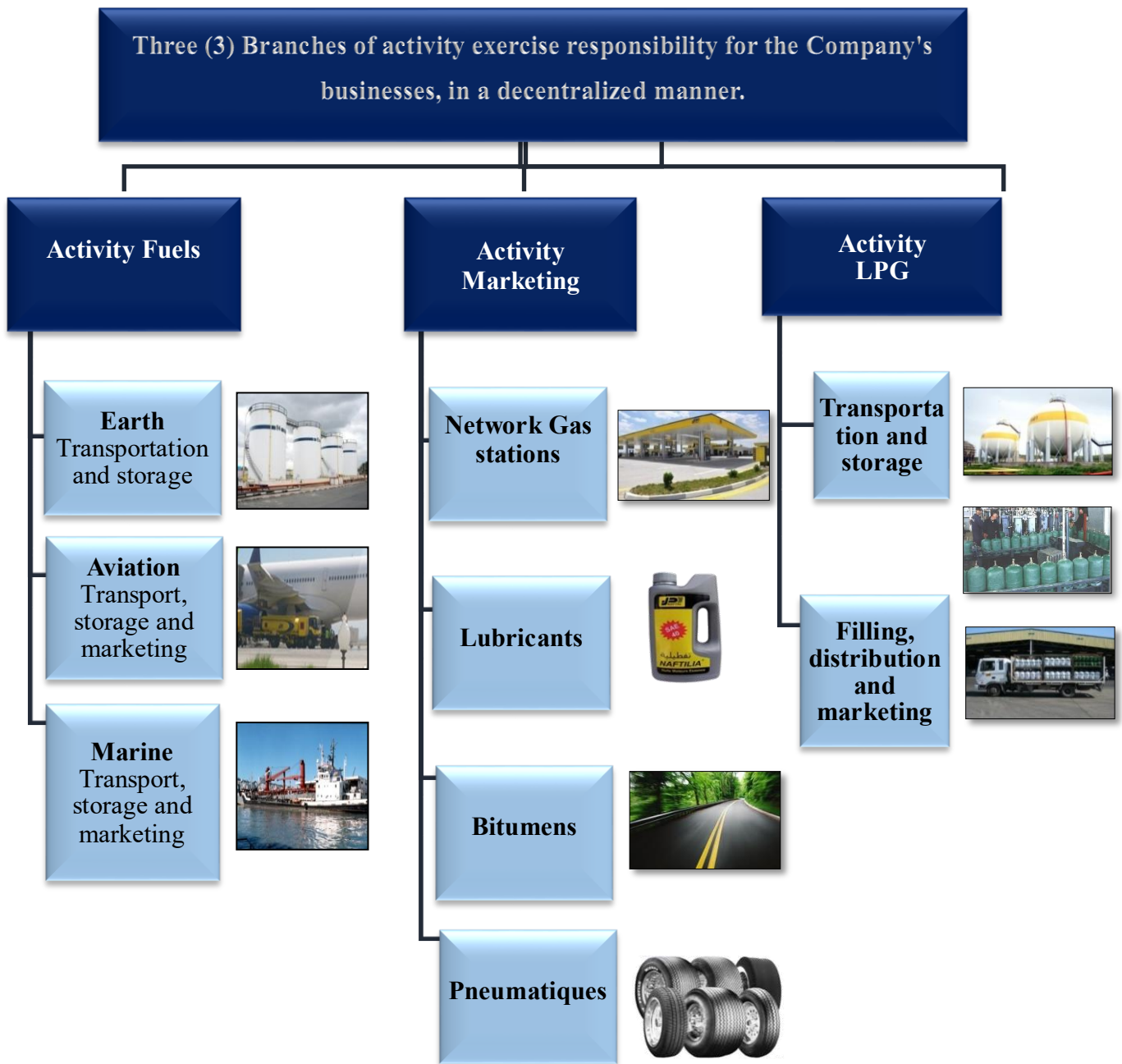


Diagram 02: representing operational activities

a. Fuels Activities:

➤ **Infrastructure:**



41 land fuel depots

Storage Capacity 700,000 m³
12 days autonomy / Fill rate at
80%



3 Loading ramps



6 Marine Centers

Storage Capacity
175,000 m³
60 days autonomy
/ Fill rate at 80%



30 Aviation depots

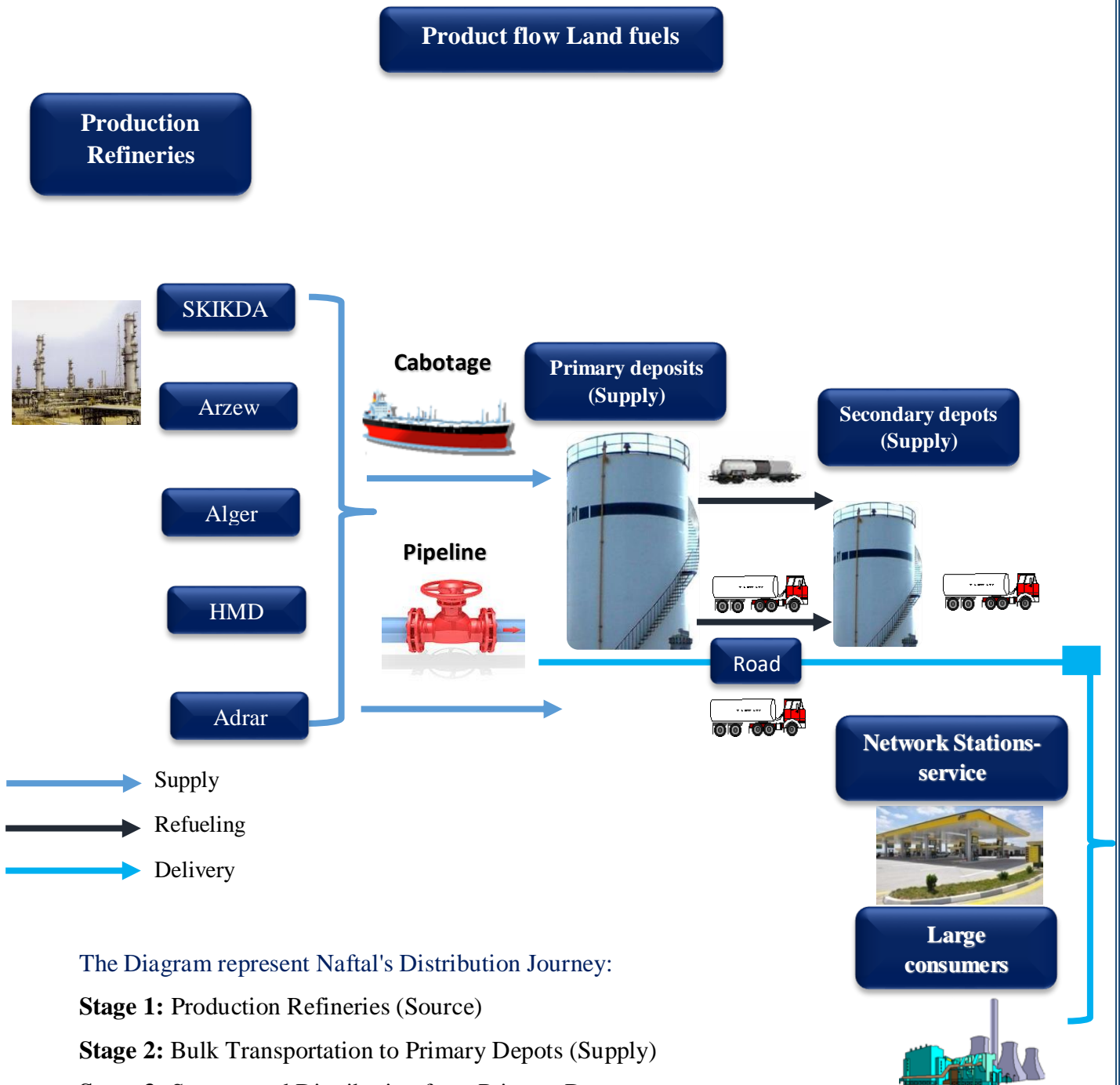
Storage Capacity
61,000 m³
25 days autonomy /
Fill rate at 80%



With these fuel activities, we can appreciate the complexity involved in ensuring a steady supply of essential fuels throughout Algeria. Naftal plays a crucial role in keeping the country moving, from powering individual vehicles to supporting vital industries like transportation and construction.

➤ **Distribution Diagram:**

Naftal is the lifeblood of Algeria's fuel sector, ensuring a steady flow of essential products across the country. Here's a comprehensive breakdown of their activities and distribution network:



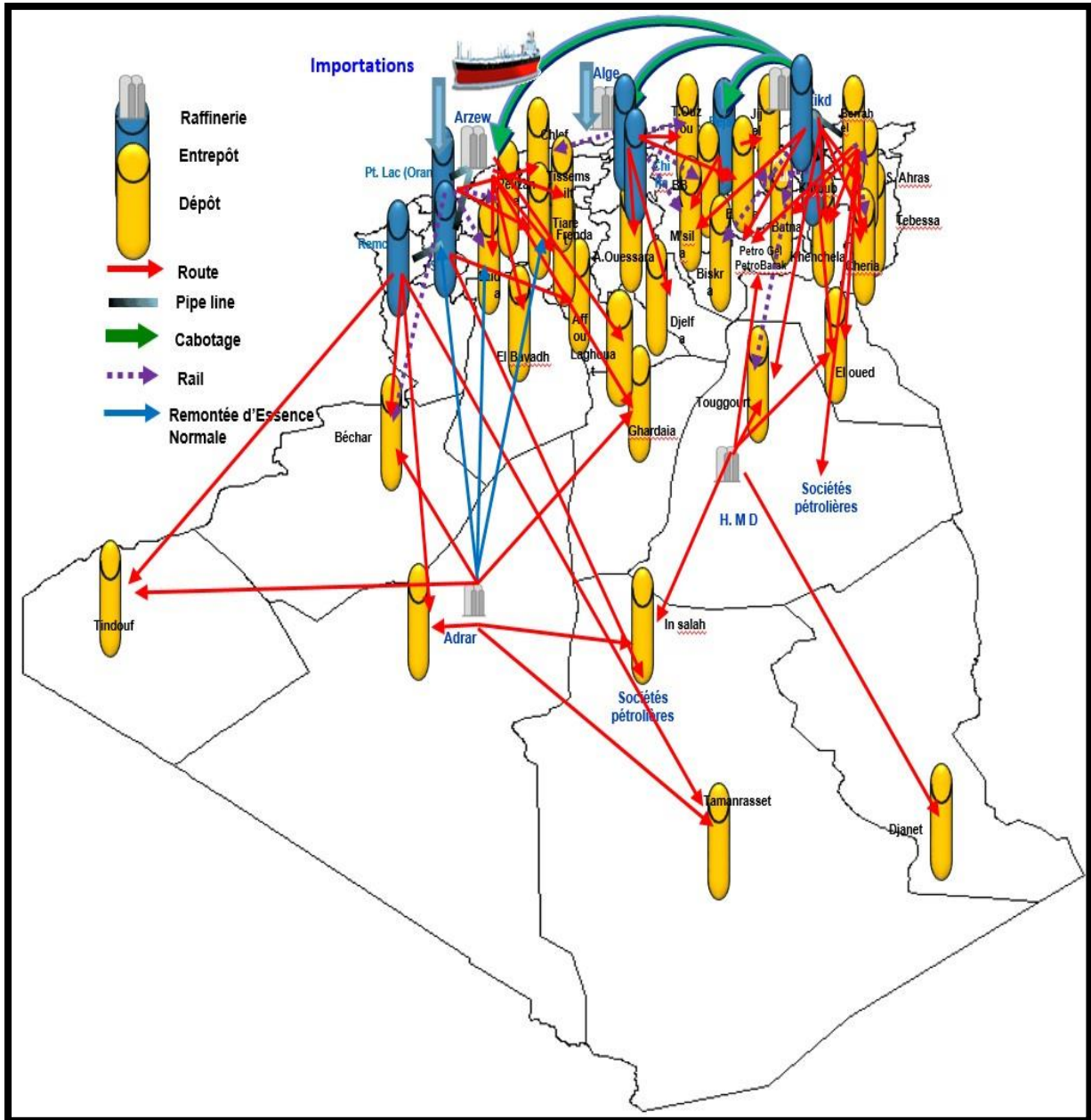
The Diagram represent Naftal's Distribution Journey:

- Stage 1:** Production Refineries (Source)
- Stage 2:** Bulk Transportation to Primary Depots (Supply)
- Stage 3:** Storage and Distribution from Primary Depots
- Stage 4:** Delivery to Secondary Depots (Optional)
- Stage 5:** Arrival at Gas Stations
- Stage 6:** Serving the Customer

➤ **Distribution Diagram**

This multi-stage journey highlights the complex logistics involved in ensuring a steady supply of fuel throughout Algeria. Naftal's well-coordinated network, from procurement at refineries to gas station operations, keeps the country moving. This figure will show us.

Figure: DISTRIBUTION SCHEME



Source: Naftal Company

b. LPG ACTIVITIES

➤ INFRASTRUCTURE

Naftal's LPG distribution activities are essential for powering homes, businesses, and fostering economic activity across Algeria. As they continue to adapt and improve their operations, they can ensure a safe, reliable, and sustainable supply of LPG for the nation.



41 Filling Centers Filling capacities
1,200,000 B13kg 1 Team



48 Relay deposits

National tool stock 920,000 B 13 KG



10 LPG bulk centers
Storage capacities 50,000 tonnes
5 days autonomy / Fill rate at 80%

c. COMMERCIALIZATION ACTIVITIES



48 Distribution Centers



15 Bitumen Centers



51 LPG vehicle conversion centers



Network of 2,642 service stations
(690 S/S owned by NAFTAL including 391 GD)



24 Lubricants and Tires Centers



Naftal, as Algeria's leading fuel distributor, engages in various commercialization activities to market their products and services effectively. Here's a breakdown of some key areas:

- **Product Portfolio:**

Focus on Land Fuels.

Potential for Alternative Fuels.

- **Distribution Network Optimization:**

Gas Station Network Management.

Modernization.

Efficiency Measures.

- **Customer Relationship Management:**

Loyalty Programs.

Business-to-Business (B2B) Sales.

Customer Service.

- **Marketing and Branding:**

Brand Awareness.

Product Differentiation.

Digital Transformation.

2.4. COMPANY DEVELOPMENT:

➤ Development program 2022-2026

To support the growth of the Company and meet medium-term challenges, we will show you the investment program approved for the period 2022-2026 is as follows:

Storage capacities:

-Completion of work to build fuel depots and LPB centers engaged and launch of new projects to increase storage capacities & the creation of new fuel depots.

-Extension of storage capacities of aviation centers.

-Completion of the construction of the CE Bordj Menaiel and extension of bulk LPG storage capacities.

-Rehabilitation and modernization of LPG filling centers & equipment and fuel depots.

Pipelines:

-Completion of work on the Skikda-Khroub-El Eulma fuel pipeline projects.

-Launch of the Arzew-Algiers LPG pipeline project and the Skikda-Khroub & El Eulma fuels

– BBA – Bouira – Algiers splitting.

Gas stations:

-Completion of the program to build motorway service stations;

-Construction of new service stations on other roads;

-Completion of the service station renovation program and creation of LPG sales points.

Naftal might be investing in expanding their gas station network to reach new areas and cater to growing demand. The following table can explain to us the investment development program over the years 2022-2026

The table of Investment development program in Naftal

Types of Investment	2022	2023	2024	2025	2026	Total 2022-2026	Quote-part
Investments to Enhance Existing Potential (IVPE)	22 883	46 140	45 258	38 495	22 089	174 865	78%
<i>Storage facilities</i>	<i>9 403</i>	<i>17 561</i>	<i>15 918</i>	<i>10 337</i>	<i>7 025</i>	<i>60 245</i>	<i>27%</i>
<i>Sales network</i>	<i>6 472</i>	<i>8 783</i>	<i>5 621</i>	<i>4 330</i>	<i>2 030</i>	<i>27 237</i>	<i>12%</i>
<i>Pipelines</i>	<i>5 669</i>	<i>19 309</i>	<i>22 323</i>	<i>22 118</i>	<i>12 839</i>	<i>82 259</i>	<i>36%</i>
<i>Unités d'enfûtage</i>	<i>1 339</i>	<i>486</i>	<i>1 395</i>	<i>1 710</i>	<i>195</i>	<i>5 125</i>	<i>2%</i>
Transportation and handling	2 927	9 205	10 768	2 151	2 151	27 201	12%
LPG packaging	1 971	2 096	1 976	2 126	1 996	10 167	5%
Material informatique	429	336	163	228	175	1 331	1%
Other projects (studies, land, partnership, etc.)	2 479	4 064	2 321	1 780	1 351	11 995	5%
T o t a l	30 690	61 841	60 487	44 780	27 762	225 559	100%

Source: Naftal Company (see annexe 02)

This table presents a potential development program based on the industry and Naftal's role in the Algerian oil sector. It represents the evolution of different types of investment during the years 2022-2026. Naftal's strategy is likely to prioritize investments to enhance existing potential and that's by putting 78% of investment funds in storage facilities, sales network, pipelines and enfûtage units the other 22% is divided on Transportation and handling, LPG packaging, Material informatique, and Other projects.

I hope this table provides a clear description of potential investment and development programs for Naftal.

3. CASE STUDY AND RESEARCH METHODOLOGY :

In this section, we delve into the case study of Naftal and the research methodology employed to investigate the impact of risk and opportunity management on project conduct. The purpose of this study is to gain a comprehensive understanding of how Naftal identifies, assesses, and mitigates risks, as well as how it identifies and exploits opportunities to enhance project outcomes. By combining qualitative insights from directive interviews with quantitative data analysis, we aim to provide a holistic view of Naftal's practices and their effectiveness.

3.1. THE TECHNICAL CARD OF THE PROJECT:

➤ **Realization of a project for a new service station Locality: Mezloug- Wilaya of Sétif :**

As part of the company's development program aimed, on the one hand, at ensuring better availability of products and services marketed by NAFTAL, and on the other hand, taking advantage of the prerequisites offered by the strategic geographical location of the base proposed and retained a priori by the joint commission responsible for the choice of land, the company launched, in this context, an opportunity study relating to the construction of a service station at the level of the proposed land base

This land with an area of 5000 M2 is located on road (RN) 28 approximately 5 km from the East-West highway. This road axis also connects Sétif to the South of Algeria via the wilaya of Batna and Biskra

- **Legal nature :** Naftal property (EX ESSO STANDARD)
- **Land area :** 5000 M2
- **Geographical location :** CNE MEZLOUG, RN 28 SETIF

3.2. CARRY OUT THE PROJECT

3.2.1. Sales and purchase forecasts for the future station:

Expectations: (What the customer anticipates or desires from the project):

The tabl represents sales and purchase forecasts for a future gas station, likely for the first five years of operation (2026 to 2030):

Sales										
Year	2026		2027		2028		2029		2030	
Product	quantity	Value kda	quantity	Value	quantity	Value	quantity	Value	quantity	Value
Diesel /TM	11500	401 462	11 730	409 491	11 965	417 681	12 204	426 035	12 448	434 555
SPB/TM species	3500	216 909	3 570	221 247	3 641	225 672	3 714	230 185	3 789	234 789
GPLc/TM	1800	32 016	1 900	33 794	2 000	35 573	2 100	37 352	2 200	39 130
Conditioned LPG/Unit	54000	10 800	54 500	10 900	55 000	11 000	55 500	11 100	56 000	11 200
Lubricants/ TM	180	97 085	200	107 873	220	118 660	240	129 447	260	140 234
Tires/Unit	500	3 494	550	3 843	600	4 193	650	4 542	700	4 892
Excluding fuel (values)		4 000		4 000		4 000		4 000		4 000
TOTAL		765 766		791 149		816 779		842 661		868 801

Purchases										
Year	2026		2027		2028		2029		2030	
Product	quantity	Value kda	quantity	Value	quantity	Value	quantity	Value	quantity	Value
Diesel /TM	11 500	366 588	11 730	373 920	11 965	381 399	12 204	389 027	12 448	396 807
SPB/TM species	3 500	201 609	3 570	205 641	3 641	209 754	3 714	213 949	3 789	218 228
GPLc/TM	1 800	19 708	1 900	20 802	2 000	21 897	2 100	22 992	2 200	24 087
Conditioned LPG/Unit	54 000	9 531	54 500	9 619	55 000	9 708	55 500	9 796	56 000	9 884
Lubricants/ TM	180	85 080	200	94 533	220	103 986	240	113 440	260	122 893
Tires/Unit	500	2 993	550	3 293	600	3 592	650	3 891	700	4 191
TOTAL		685 509		707 808		730 335		753 094		776 089

Source: company Naftal

Summary:

- The forecasts show a progressive increase in both sales and purchases for all products over the years from 2026 to 2030.

CHAPTER 03: PRACTICAL PORTION: NAFTAL COMPANY

- The values and quantities for sales are consistently higher than those for purchases, indicating expected growth and profit margins.
- The data reflects a steady and optimistic growth trend for the company's products over the forecasted period.

Planned activities for the future station (with interchange):

- Sale Fuels
- LPG sales
- Conditioned LPG
- Sales Other free margin products
- Service bay services
- Excluding fuel

3.2.2. Income Statement Table / TCR:

Income Statements and Total Cost Reports (TCRs) are used for the project's deliverables (e.g., the gas station in our example). Project management utilizes different financial documents to track its own performance.

DESIGNATION	2026	2027	2028	2029	2030
70 vents and products annexes	765 766	791 149	816 779	842 661	868 801
72 Variation stocks products finishes					
73 Capitalized production					
74 Operating subsidy					
I-PRODUCTION	765 766	791 149	816 779	842 661	868 801
60 Purchases consumed	685 509	707 808	730 335	753 094	776 089
61/62 External services and other consumption	4 520	4 565	4 611	4 657	4 704
II-CONSUMPTION OF THE EXERCISE	690 029	712 374	734 946	757 751	780 793
III-ADDED OPERATING VALUE	75 737	78 775	81 833	84 910	88 008
63 Personnel costs	40 017	40 417	40 821	41 230	41 642

CHAPTER 03: PRACTICAL PORTION: NAFTAL COMPANY

64 Taxes, levies and similar payments	1 991	2 011	2 031	2 051	2 072
IV-GROSS OPERATING SURPLUS	33 729	36 347	38 980	41 629	44 294
75 Other operating income	0	0	0	0	0
65 Other operating expenses	0	0	0	0	0
68 Depreciation allowance, provision	31 221	31 221	31 221	31 221	31 221
78 Reversal of impairment losses	0	0	0	0	0
V-OPERATIONAL RESULT	2 509	5 126	7 759	10 408	13 074

Source: company Naftal

The table covers forecasts for five years, from 2026 to 2030.

Interpretation:

- **Revenue Growth:**

Steady increase in sales and revenue over the five years, reflecting a positive growth trend in business operations.

- **Expense Management:**

Controlled increase in consumed purchases and external services, ensuring expenses are in line with revenue growth.

- **Value Added:**

Consistent growth in value added, indicating efficient management and productive operations.

- **Personnel and Taxes:**

Gradual increase in personnel costs and taxes, reflecting business expansion and increased operational activity.

- **Gross Operating Surplus:**

Positive and growing gross operating surplus each year, demonstrating profitability and efficient cost management.

- **Depreciation and Provisions:**

Stable depreciation and provision costs, indicating predictable and manageable asset management.

- **Operating Result:**

Increasing operating results year over year, showcasing improved profitability and operational efficiency.

CHAPTER 03: PRACTICAL PORTION: NAFTAL COMPANY

The project generates a positive gross operating surplus, reflecting the profitability of the activity. The steady increase in revenue, controlled expenses, and consistent value addition indicate a well-managed and financially healthy operation over the forecasted period.

3.2.3. Net Present Value (NVP):

Calculating the NPV for the gas station

Pour un i=6%		6,00%					
Years	Disbursements	Updated disbursement	Receipts	Act coefficient $(1+i)^{-N}$	Discounted collection	FNTE act	Cumulative FNTE
1	319 342,40	301 266,41		0,9434		- 301 266,41	- 301 266,41
2		-	33 729,27	0,8900	30 018,93	30 018,93	- 271 247,48
3		-	36 347,04	0,8396	30 517,68	30 517,68	- 240 729,80
4		-	38 980,22	0,7921	30 875,99	30 875,99	- 209 853,81
5		-	41 629,18	0,7473	31 107,75	31 107,75	- 178 746,07
6	1,06	0,75	44 294,27	0,7050	31 225,71	31 224,96	- 147 521,10
7		-	47 129,98	0,6651	31 344,13	31 344,13	- 116 176,98
8		-	50 147,23	0,6274	31 462,99	31 462,99	- 84 713,99
9		-	53 357,64	0,5919	31 582,31	31 582,31	- 53 131,68
10		-	56 773,58	0,5584	31 702,07	31 702,07	- 21 429,61
11		-	60 408,21	0,5268	31 822,29	31 822,29	10 392,68
12		-	64 275,53	0,4970	31 942,97	31 942,97	42 335,65
13		-	68 390,43	0,4688	32 064,10	32 064,10	74 399,76
14		-	72 768,77	0,4423	32 185,70	32 185,70	106 585,46
15		-	77 427,41	0,4173	32 307,75	32 307,75	138 893,21
16		-	82 384,29	0,3936	32 430,27	32 430,27	171 323,48
17		-	87 658,52	0,3714	32 553,25	32 553,25	203 876,73
18		-	93 270,39	0,3503	32 676,70	32 676,70	236 553,44
19		-	99 241,54	0,3305	32 800,62	32 800,62	269 354,05
20		-	105 594,96	0,3118	32 925,01	32 925,01	302 279,06

Source: company Naftal

Interpretation:

- **Initial Investment:** The project requires an initial investment of 319,342 in Year 1.
- **Cash Inflows:** The project begins generating cash inflows from Year 2, increasing steadily each year.
- **Discounted Cash Flows:** Cash inflows are discounted at 6% to reflect their present value.
- **Positive NPV:** The project achieves a positive net present value by Year 11, indicating that the cumulative present value of cash inflows exceeds the initial investment.
- **Long-Term Profitability:** By Year 20, the cumulative discounted cash flows reach 302,278.94, demonstrating the project's long-term profitability.

The VAN calculation shows that this project would be profitable at the end of the eleventh (11) year of operation with a positive NPV of around **10 million DA**

However, the investment cost must not exceed **320 million DA**

3.3. Research Methodology:

3.3.1. Presentation of the Methodological Approach of the Study:

To comprehensively analyze the impact of risk and opportunity management on project conduct within Naftal, and to address our research questions and hypotheses, we employed a specific method research design. This approach integrates qualitative studies to provide a holistic understanding of the research problem.

Qualitative Study: Directive Interviews

To gain in-depth insights into the practices and challenges of risk and opportunity management at Naftal, we conducted a qualitative study using directive interviews. Key stakeholders, including project managers, risk management professionals, and senior executives, were interviewed. These individuals were chosen for their direct involvement in managing projects and implementing risk and opportunity management strategies. The qualitative approach allows us to capture detailed narratives and personal experiences, providing a rich context for understanding the effectiveness and challenges of these practices.

3.3.2. Data Collection Methods :

Directive Interviews:

- **Rationale for Choosing Directive Interviews:** Directive interviews were chosen to gather in-depth insights from key stakeholders at Naftal regarding their experiences

with risk and opportunity management. This method allows for structured yet flexible conversations, enabling the collection of rich, detailed information.

- **Process of Developing the Interview Guide:** The interview guide was developed based on the research questions and objectives. Main themes included:
 - Types of risks and opportunities encountered.
 - Processes for identifying, assessing, and prioritizing risks.
 - Effectiveness of current risk mitigation and opportunity exploitation strategies.
 - Challenges in implementing these strategies. Types of questions included open-ended questions to encourage detailed responses, as well as probing questions to delve deeper into specific topics.

Sampling Strategy

- **Criteria for Selecting Interview Participants:** Participants were selected based on their roles and involvement in project management and risk/opportunity management at Naftal. Criteria included:
 - Experience in managing projects at Naftal.
 - Direct involvement in risk and opportunity management processes.
 - Representation from different levels of the organizational hierarchy.

4. INTERVIEWS :

4.1. Interview Questions and Answers :

To complete our work, and to be able to respond to the research hypotheses; We decided to carry out a directive interview, this type of interview consists of asking questions to the interviewee in order to collect practices and testimonies and obtain precise answers to the questions asked. So, our choice of this type lies in the possibility of guiding the respondents.

- **Risk Identification and Management**

Q1: What are the most common types of risks you encounter in your projects?

R1: the most common types of risks we encounter include schedule delays, budget overruns, resource shortages, technical failures, regulatory compliance issues, and unforeseen environmental factors. These risks can stem from both internal and external sources, impacting project timelines and outcomes.

Q2: How does Naftal currently identify potential risks in its projects?

R2: Naftal identifies potential risks through a structured risk assessment process that involves brainstorming sessions, expert consultations, and historical data analysis. We engage project stakeholders to gather diverse perspectives on potential threats. Additionally, we utilize risk checklists and past project reviews to ensure we consider all possible risks.

Q3: Can you describe the process Naftal uses to assess and prioritize risks?

R3: Our risk assessment process begins with risk identification, followed by a qualitative analysis to evaluate the likelihood and impact of each risk. We then perform a quantitative analysis to assign numerical values to risks, helping us prioritize them based on their potential impact on the project. Risks are categorized into high, medium, and low priority, and we develop mitigation plans accordingly.

Q4: How often are risk assessments updated during the project lifecycle?

R4: Risk assessments are updated regularly throughout the project lifecycle, typically at key project milestones such as the initiation, planning, execution, and monitoring phases. We also conduct ad-hoc risk assessments whenever significant changes occur in the project environment, ensuring we remain proactive in managing risks.

Q5: What tools or methodologies does Naftal use for risk identification and management?

R5: Naftal employs various tools and methodologies for risk identification and management, including SWOT analysis, risk registers, risk matrices. We also use project management software with built-in risk management modules to track and monitor risks throughout the project lifecycle.

- **Opportunity Identification and Exploitation**

Q1: How does Naftal identify opportunities within its projects?

R1: Opportunities are identified through continuous monitoring of project activities and market conditions. We encourage team members to look for potential benefits or improvements during project meetings and reviews. Additionally, we conduct periodic SWOT analyses to uncover strengths and opportunities that can be leveraged for project success.

Q2: Can you provide examples of opportunities that were successfully exploited in past projects?

R2: One example of a successfully exploited opportunity is when we identified a new technology that could streamline our logistics processes. By integrating this technology, we reduced transportation costs and improved delivery times, significantly enhancing project efficiency. Another example is recognizing a strategic partnership that provided additional resources and expertise, helping us overcome a critical resource shortage.

Q3: What strategies does Naftal employ to ensure opportunities are recognized and acted upon?

R3: To ensure opportunities are recognized and acted upon, Naftal fosters a culture of open communication and continuous improvement. We have established a systematic process for capturing and evaluating opportunities, which includes regular brainstorming sessions, feedback loops, and incentive programs for employees who identify valuable opportunities. We also maintain a flexible project management approach, allowing us to quickly adapt and capitalize on emerging opportunities.

- **Risk Mitigation Strategies**

Q1: Can you describe Naftal's current risk mitigation strategies?

R1: Naftal's risk mitigation strategies include risk avoidance, risk reduction, risk transfer, and risk acceptance. We develop detailed contingency plans for high-priority risks, allocate additional resources to mitigate potential impacts, and purchase insurance for specific risks where applicable. We also conduct regular training sessions to ensure all team members are equipped to handle potential risks effectively.

Q2: How effective do you find these strategies in addressing identified risks?

R2: Overall, our risk mitigation strategies have been quite effective in addressing identified risks. By proactively planning and implementing these strategies, we have successfully minimized the impact of many risks on our projects. Regular reviews and updates to our risk management practices also ensure we remain responsive to new and evolving risks.

Q3: Can you provide an example of a risk mitigation strategy that was particularly successful?

R3: A particularly successful risk mitigation strategy involved addressing a potential supplier failure. We developed a comprehensive contingency plan that included identifying alternative suppliers, negotiating backup contracts, and maintaining a buffer inventory. When the primary supplier did encounter issues, we seamlessly transitioned to our backup plan, preventing any disruption to the project timeline.

Q4: What are the main challenges you face in implementing risk mitigation strategies?

R4: The main challenges in implementing risk mitigation strategies include ensuring stakeholder buy-in, securing adequate resources, and maintaining flexibility in the face of changing project conditions. Additionally, accurately predicting the impact of certain risks and effectively communicating the importance of risk management to all team members can sometimes be challenging. However, ongoing training and clear communication channels help mitigate these challenges.

4.2. SUMMARY OF KEY FINDINGS :

Types of Risks and Opportunities:

- **Risks:** Common risks identified included schedule delays due to resource shortages, budget overruns from unforeseen costs, technical failures, regulatory compliance issues, and external environmental factors.
- **Opportunities:** Identified opportunities included technological advancements that could streamline processes, strategic partnerships that provided additional resources, and market expansion opportunities.

Risk and Opportunity Management Processes:

- **Identification:** Naftal identifies risks through brainstorming sessions, expert consultations, historical data analysis, and stakeholder engagement. Opportunities are identified through continuous monitoring, SWOT analyses, and feedback from project teams.

- **Assessment and Prioritization:** Risks are assessed qualitatively by evaluating their likelihood and impact, and quantitatively through statistical methods like Monte Carlo simulations. Opportunities are evaluated based on their feasibility, potential benefits, and alignment with project goals.
- **Mitigation and Exploitation:** Risk mitigation strategies include risk avoidance, reduction, transfer (e.g., insurance), and acceptance with contingency plans. Opportunities are exploited by developing action plans, allocating resources, and setting timelines for implementation.

Effectiveness of Strategies:

- **Successes:** Effective strategies mentioned included comprehensive risk assessments leading to early identification of potential issues, and successful exploitation of opportunities such as adopting new technologies that reduced operational costs.
- **Challenges:** Challenges in consistently identifying and exploiting opportunities due to resource constraints and changing project conditions were noted. Some mitigation strategies were less effective due to inadequate stakeholder buy-in or insufficient resources.

Challenges in Implementation:

- **Stakeholder Buy-in:** Securing stakeholder commitment to risk management practices was difficult, particularly in terms of allocating necessary resources and adjusting project plans.
- **Resource Allocation:** Ensuring adequate resources for both risk mitigation and opportunity exploitation was a recurring challenge, often due to budget constraints or competing project priorities.
- **Flexibility and Adaptability:** Maintaining flexibility to adapt risk and opportunity management strategies in response to changing project conditions proved challenging, highlighting the need for more dynamic approaches.

The methodological approach of this study, through its qualitative design, provides a comprehensive framework for exploring the impact of risk and opportunity management on project conduct within Naftal. By focusing on qualitative data, the study captures the complexity and multifaceted nature of the research problem, offering valuable insights and

detailed narratives to support the findings. This approach not only enhances the depth and richness of the results but also provides a nuanced understanding of how risk and opportunity management practices influence project outcomes. By conducting in-depth interviews with key stakeholders, the study gathers first-hand experiences and perspectives, which are crucial for understanding the practical challenges and effectiveness of these management practices within Naftal.

5. SUMMARY AND RECOMMENDATIONS:

5.1. SUMMARY:

This study explored the impact of risk and opportunity management on project conduct within Naftal, emphasizing the importance of a robust framework for identifying, assessing, and addressing uncertainties in projects. Through directive interviews with key stakeholders at Naftal and secondary data analysis, we identified common risks such as schedule delays, budget overruns, resource shortages, and regulatory compliance issues. Opportunities included technological advancements, strategic partnerships, and market expansion possibilities. Naftal's current risk management practices, including risk avoidance, reduction, transfer, and acceptance, were found to be generally effective, although challenges in stakeholder buy-in and resource allocation were noted. Opportunity management practices, such as continuous monitoring and SWOT analyses, were highlighted as essential for exploiting potential benefits and enhancing project outcomes.

5.2. RECOMMENDATIONS:

Based on the findings of this study, several key recommendations have been formulated to enhance Naftal's risk and opportunity management practices. These recommendations aim to address identified challenges, leverage opportunities more effectively, and improve overall project outcomes. By implementing these strategies, Naftal can strengthen its project management framework and increase resilience against potential risks while capitalizing on emerging opportunities.

- **Enhance Stakeholder Engagement:** Improve stakeholder buy-in for risk and opportunity management practices through regular communication, training sessions, and involving stakeholders in the risk assessment process.

- **Resource Allocation:** Ensure adequate resources are allocated for risk mitigation and opportunity exploitation. Consider establishing a dedicated fund for managing unforeseen risks and seizing emerging opportunities.
- **Continuous Improvement:** Implement a feedback loop mechanism where lessons learned from past projects are systematically documented and reviewed to refine risk and opportunity management strategies.
- **Adopt Advanced Tools:** Utilize advanced project management software with integrated risk and opportunity management modules to streamline processes and improve real-time tracking and response.
- **Training and Development:** Conduct regular training sessions for project teams on risk identification, assessment techniques, and opportunity management to build a proactive risk culture within the organization.

6. CONCLUSION:

In conclusion, the study underscores the critical role of comprehensive risk and opportunity management in achieving project success. By proactively identifying and addressing potential threats and opportunities, Naftal can enhance its project outcomes and achieve strategic objectives more effectively. The insights gained from this study provide a foundation for developing more robust frameworks and practices for risk and opportunity management, contributing to improved project performance and organizational resilience. Future research could further explore quantitative methods for risk assessment and the integration of dynamic risk management approaches to adapt to changing project environments.

GENERAL CONCLUSION

General conclusion

In the course of our study, we have demonstrated the importance of risk and opportunity management in enhancing project conduct within the company Naftal. The main objective was to apply a structured approach to risk and opportunity management in order to compare Naftal's current practices with industry best practices and identify areas for improvement.

Ultimately, we were able to conduct a more in-depth study by observing firsthand what happens in the field, which provided us with a clearer vision of the actual organization of risk and opportunity management activities.

At the conclusion of our research, we were able to address our problem statement by confirming our initial hypotheses, namely:

HYPOTHESIS 1:

Implementing a comprehensive risk and opportunity management framework leads to a significant reduction in project risks.

- **By** proactively identifying potential risks, organizations can develop mitigation plans to minimize their impact. A robust framework ensures a systematic approach to risk assessment, allowing for early detection and addressing of potential issues.

HYPOTHESIS 2:

Proactively identifying and exploiting opportunities improves project outcomes.

- **Opportunities** can present themselves as chances to improve efficiency, reduce costs, or gain a competitive edge. Proactive identification allows organizations to capitalize on these opportunities, potentially leading to faster project completion, higher quality deliverables, or increased profitability.

HYPOTHESIS 3:

Organizations with a strong culture of risk and opportunity management demonstrate higher project success rates compared to those with limited focus on these aspects.

- **A strong culture** signifies that risk and opportunity management are embedded within the organization's processes and values. This leads to a more proactive and preventative approach, fostering better decision-making and adaptation throughout the project lifecycle. Organizations with limited focus might be more reactive, leading to missed opportunities and an increased chance of encountering unmanaged risks.

General conclusion

Indeed, the concept of comprehensive risk and opportunity management had never been fully utilized at Naftal, despite the company having managed projects for years. Nevertheless, we managed to establish an end-to-end risk and opportunity management framework and identify all risks and opportunities impacting projects. By developing this framework, we were able to analyze it and implement an action plan based on the results obtained, which could enhance project performance.

During our study, we encountered some difficulties, notably limited access to information sources due to confidentiality constraints. Despite this, we did our best to make our work as coherent as possible given the data available to us.

In conclusion, we hope that our study contributes to research by adding value and complementing existing work in this field. We also aim to raise awareness among professionals about the importance of implementing a similar approach, which could significantly impact their activities. By conducting a thorough and methodical analysis, companies can identify areas for improvement and implement effective strategies to optimize their processes and enhance overall performance. We hope to encourage broader reflection on the adoption of such approaches and foster increased commitment to continuous improvement across all professional sectors.

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