



**Smart UP solution**

**A business plan on launching a startup: developing a software platform and application for the management of construction companies**

**Nour El Islam Mazouz**

Final Dissertation submitted to Instituto Politécnico de Bragança

To obtain a master's degree in Entrepreneurship and Innovation

**Supervisors:**

**Prof. Oliva M. D. Martins, Ph.D**

**Prof. Nuno Moutinho, Ph.D**

**Bragança, July 2025**



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## **Abstract**

This thesis presents a business *named 'SmartUP Solution'*, an integrated digital platform designed to modernize project management in the construction sector.

The initiative is based on a clear observation: construction companies, regardless of their size, face persistent structural challenges, such as cost overruns, misallocation of resources, missed deadlines, and the lack of effective tracking systems. These issues hamper the sector's overall productivity and lead to significant economic losses.

'SmartUP Solution' offers a technological response to these challenges by providing a centralized tool allowing engineers, project managers, and contractors to supervise, plan, and manage all stages of a construction site in real time. Our team integrates features such as automated resource management, task tracking, budget variance analysis, and dynamic visualization of construction progress. The objective of this business plan is to facilitate decision-making, improve transparency in project execution, and strengthen collaboration between the various stakeholders on the construction site.

A thorough SWOT analysis highlights the project's numerous strategic advantages, including strong profitability potential, high relevance in a context of accelerated digital transformation, and the ability to deploy it across various project types (residential buildings, bridges, roads). However, certain challenges must be anticipated: resistance to change in a historically traditional sector, the need for adoption support, and technical requirements in terms of connectivity and data security.

'SmartUP Solution' is positioned as an innovative, scalable, and high-value-added solution capable of significantly contributing to the performance, sustainability, and digitalization of the construction sector, while guaranteeing a measurable improvement in return on investment for its users.

**Keywords:** technological innovation; software; civil engineering sector; Middle East and North Africa

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## Introduction

In the civil engineering sector, effective project management is a major challenge due to the complexity of tasks, the diversity of stakeholders, and time and budget constraints. Project managers must juggle many variables, such as task planning, resource management, deadline monitoring, and cost optimization. However, traditional management tools often lack flexibility or are not adapted to the specificities of the construction industry, leading to delays and budget overruns.

Faced with these challenges, 'technological innovation' offers a unique opportunity to optimize construction project management. This business project proposes the creation of a digital platform, and an application dedicated to the planning and monitoring of civil engineering projects (Rose et al, 2021). The objective is to centralize all essential information in a single tool, thus allowing project managers, engineers, and other stakeholders to better anticipate risks, improve coordination, and make informed decisions in real time.

The project aims to integrate advanced features, such as resource and material management, deadline tracking, schedule visualization, as well as alerts in case of budget overruns or delays. By combining the principles of civil engineering with entrepreneurship and innovation methodologies, this study will analyse the feasibility of the project, its market potential and its impact on the efficiency of companies in the sector.

This project will be structured around several axes: an analysis of the market and the needs of construction professionals, a study of existing solutions and their limits, as well as the development of a detailed business plan for the development and implementation of this platform.

In the civil engineering industry, project management is a complex process involving multiple actors, varied resources and strict budgetary and time constraints. Despite the existence of several project management software. The main question of this Business Plan is: is the project relevant and useful enough in the world of management and the development of civil engineering construction project management to be recognized by small and large-scale companies? The answer lies in the relevance of controlling business risks.

In this sense, scheduling is crucial for any company handling diverse and complex projects. To effectively manage these projects, various features are needed to simplify user understanding, track changes (such as delays or scope change), and schedule the use of available materials, equipment, and resources. Our clients choose our project management software for its ability to centralize all project information. With a comprehensive scheduling system that combines resource, task, & project management, and many other features, user project manager will have all the tools necessary to make informed decisions and enhance efficiency.

Faced with these challenges, “SmartUP solution” offer an innovative alternative to optimize the management of civil engineering projects, integrated digital platform help construction companies plan effectively, manage their resources and improve productivity while reducing costs and delays. The main objective is to design a business plan for the development and implementation of “SmartUP solution” as a simple application and web platform. For make easy the complexity of construction sites, the involvement of many stakeholders (architects, engineers, site managers, suppliers) and the need to optimize costs and deadlines make management tools essential bases on communication in real time.

“SmartUP solution” has a strong potential for profitability and meets a real market need. With an adapted financing strategy, a differentiated offer and a progressive implementation, this project has all the resources to succeed. The civil engineering sector faces many challenges in project management, including the complexity of tasks, the lack of coordination between stakeholders and frequent budget overruns. ‘SmartUP Solution’ presents itself as an innovative response to these issues by offering a platform and a specialized application that integrates planning, resource management and communication between teams.

Market analysis has shown a strong need for project management by offering an accessible, intuitive and efficient alternative. With the detailed work of our developers, we offer a mobile and digital model that globalizes all the needs of our user including Using ‘smartsheet tool for implementation’, structure, financing and gradual market adoption, Our project can revolutionize work construction site by management and significantly improve the productivity of the sector we focus on our innovative solution offering a real-time remote work progress of any construction project from basic to big projects.

‘SmartUP Solution’ is not just an idea, but an opportunity for change the way of working, this, We propose guide and a flexible model with approach focused on the construction and building projects need, developing ‘SmartUP Solution’ is Important key to become important application by digitalization of the sector with the development of the artificial intelligence.

‘SmartUP solution’ is a tool for the future constructions project with new innovation and entrepreneurship to transform the civil engineering sector more through an effective digital solution. ‘SmartUP Solution’ has the potential to become a reference in construction by the way and the utilisation of the application and the web site.

# 1. Theoretical Framework

'SmartUP solution' is a business plan for construction industry our Important challenge is to develop the way of engineers users for work and management of construction project like home or office building, bridge also road, our goal is to help users to make easy to manage cost overruns, resource mismanagement, and lack of real-time progress, To help company and user to minimizing losses and budget value of projects by make easy to respecting the deadline of all step in the construction fields. A few important concepts:

**Technological innovation.** Technological innovation refers to the process of introducing new technologies or improving existing ones to create novel and enhanced products, services, or processes.10/05/2024

**Software.** Software is a set of instructions, data or programs used to operate computers and execute specific tasks

**Civil engineering sector.** is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including public works such as roads, bridges

**Forproject.** Technology provides best-in-class software tools and support services to help you simplify and improve your earned value management process.

**Remote.** Practice of working from outside of an office

**Wireframes.** A wireframe is a high-level plan that illustrates the structure of your website, app, or project. It does not include drawings or details.

**Sketch and Adobe xd.** Each Sketch Symbols will be converted into an Adobe XD Component, allow a seamless transition. Even entire design systems can be converted with just a single click and are ready to be used.

**MongoDB.** MongoDB is a document database used to build highly available and scalable internet applications. With its flexible schema approach, it's popular with development teams using agile methodologies.

**MVP prototype.** An MVP is the first version the product containing core features and released to a limited audience

**Artificial intelligence (AI).** AI is the capability of computational systems to perform tasks typically associated with human intelligence

**MENA.** Middle East and North Africa

The quality of our IT developer and the team behind the project we create our wireframes and prototypes, by using Sketch and Adobe xd to design the user interface, for database and cloud solution we use MongoDB.

For the functionalities we secure login and role-based access control, integrating in the app and the platform real-time collaboration integrating chat, file sharing, and notification.

Conduct unit testing, integration testing and user acceptance testing to ensure the platform is bug-free and meets user requirements. To be more security 'SmartUP solution' is implemented multi-factor authentication.

For our users we offer training materials and on-boarding support for all subscriber.

***Timeline and milestones.*** Design and prototyping 3-4 months (Wireframes, MVP prototype), Development 6-7 months core functionalities, testing. We offer Beta testing 1-2 months (user feedback, improvements), Launch and Marketing 1-2 months (Full launch, marketing campaign).

Finally, post-launch monitoring after finishing all previous steps (Updates, scaling, support).

## 2. Business plan

After our research and expertise in the field of civil engineering, we have concluded this business plan, which is designed for the market analysis in the world of technical and technological needs in the construction sector in general, our solution offers unique value (exclusive data, automation, optimal UX, Users on line connection).

'SmartUP solution' with the right use of AI like a tools and data science by experience and research open up enormous opportunities to construction community. We're going to present our business plan at the following point.

### 2.1. Executive summary

Workplace technologies have developed rapidly. With AI-powered analytics and real-time collaboration have revolutionized business operations.

To introduce the idea by working and research we get this article "In recent years the field of management within construction companies is concerned with the use of resources, whether human or material, to maximize the profitability of the dedicated effort and to make the investments made the most beneficial. Taking into consideration that construction is a truly massive industry and with so many people involved in this sector and related to the industry's increasing value, construction businesses must find a smooth way to manage and organize projects. This relies on many techniques and approaches to organize, direct, improve and optimize"

The transformations facing the challenges of development are thus essentially apprehended around the ability to offer competitive and innovative management solutions on construction projects. Keep always good performance and the concern for the management of material and human resources not only reinforce a policy of innovation in management tools but also designs approaches centered on the question of the choice of good materials, products and constructive systems.

Reaching excellent construction project performance relies on different dimensions of project management. Among those, with integration management is important from since effective project to manage with we propose an integration of processes and people and user to keep always updated within a construction project progress in real time. Project managers and the engineers up to the profile to see in advance the progress of the works and updated on our application with a simple manipulation on our application using our tools by sharing communication with each stakeholder from the contractors to the final clients with notify email and notification phone, a daily reporting, and document storage showing all the progress by data and video. With our new technology's construction workers need our application for all features time tracking, resource tracking, and job costing for each step and day.

With that in mind, we consider that construction project management applications are the great way to keep track of construction projects we propose to create value for the businesses as they bring the opportunity to modernize and accelerate the process of work in projects in real-time.

The purpose of this project is to launch a startup that offers a digital solution through an application to construction professionals. This application will gather together all the tools necessary for the good management of construction projects: planning tools, scheduling tools, monitoring tools, cost management tools, supply tools, communication tools. Our application will be usable by each stakeholder in the project by having a new version according to his role in one professional application available on all version phone with her personal access and to be always linked between each stakeholder in the project.

'SmartUP solution' team members already had a professional background in the management of the building sector from recognized many needs in this industry, we wanted to start this new business through our start-up which is offering a solution that can fulfil management of projects needs and by the work of our IT team and marketing we can success in this sector.

Portugal which now is considered to be among Europe's hottest innovation hubs our team are proud to be one from national digital start-up, by offering use a preferred language's option for the application and our web site on Arabic. English and Portuguese languages version.

### **What is a Project Management Software?**

Project Management Software (PM software) is a versatile tool used to plan, schedule, and manage all types of projects, including manufacturing, complex projects, and construction. It helps in organizing every step of a project, starting from the bill of specifications.

Project management software supports various project management methodologies, including "Waterfall method, Agile method, V-Model method, Lean method, Prince2 method, Six Sigma method and Critical Chain Project Management (CCPM)"

From an operational perspective, project management software allows project managers to schedule projects while considering resource management, financial tracking, and performance analysis. It enhances efficiency by providing an overview of the project, minimizing the impact of delays, and facilitating collaboration between the project manager and the project team.

On the other hand, we have chosen 'MENA', Africa as the first target markets because we judge that these untapped markets are offering more opportunities to grow faster, especially if we target the local companies which stood 'Skeptics' for using technologies for the lack of support from the current solution providers in the world market. And by having enough information about the sector in these regions we are going to create a specific approach to fulfil the special needs of the companies with our applications and will try to cross the sun of the users in these countries and then expand to other parts of the world.

The Demographics of 'MENA' region shows a highly populated, culturally diverse region spanning three continents. As of 2018, the population was 578 million.

'Saudi Arabia's economy is going through an incredible change. The country's GDP will grow by 4.6% in 2025. This growth comes from a smart mix of increased oil production and a thriving non-oil sector that makes up 52.2% of the GDP.

The Kingdom leads the way in digital progress with major investments in technology. The IT and educational technology sectors will see investments reach SAR 103 billion by 2025. The Saudi Central Bank's complete fintech strategy wants to boost Fintech companies to 525, adding over SAR 13 billion to GDP by 2030, Smart infrastructure development that lines up with Vision 2030, according to the Global News-wire, Global Construction Industry Report 2021-2023.

## **2.2. Company description**

'SmartUP solution' is a SaaS (Software as a Service), Web site platform combined with mobile application available on Mobil IOS and Android for our goal is to revolutionize project management by offering an efficient digital solution helps entrepreneurs and client to better manage and track all step and tasks. In this business plan we describe a new economic model giving all details of development strategies and financial forecasts on focus to ensure the success of the project.

Our application 'SmartUP solution' is an innovative management solution created for this industry and where every company member has access to a work management platform that allows everyone to plan, manage and automate their activities. The product that we are offering can suit every company and for a simple user in order to follow these decoration or architectural changes of his family home, large or small organization from basic features to edit your own version from scheduling, workflow management, communication tool between the stakeholders, daily report generator, budget control, drawing viewer Sketchup.

User can be from a large bunch we have option to added to the basic version of the software to compose a suitable application. With that client can support and update on real-time. Adding to that an access to our central database for all the suppliers of the construction field specific to their countries, Client can from here office place track all progress of here project in all places on the word. The main objective is to create not just a tool but a platform of support that will facilitate the work of every actor in infrastructure development, starting from the top management to the contractor to the client, finishing with the simple worker while creating a transparent and efficient work environment supported by an application. At the same time, every project detail is easily reachable in one place where costs, schedules, scope, communication, risks, procurement, resources, etc. can be managed optimally.

'SmartUP solution' want to have role as a support in the infrastructure development by doing a good analysis of the needs of our clients by making tailor-made programs for each project and each company.

First, history startup idea was born by all master courses by study on 'instituto Politécnico de Bragança (IPB)' I decide to launch the 'SmartUP solution'. In my project, I am the CEO, responsible for the overall management of the 'SmartUP solution' project. I make strategic decisions and lead the team to move the project forward. I am the one who oversees operations, defines the long-term vision, and ensures the smooth running of the company. to guide the project to success, by coordinating efforts and ensuring that all stages are carried out efficiently. My colleague 'Mohamed Hammache', an architect, with his expertise in design and development of architectural solutions, brings added value by providing creative ideas and advice on the aesthetic and functional aspects of the solution. He contributes to the development of the vision and technical solutions adapted to my project, ensuring that the architecture and practical needs of the project are well integrated.

In addition, a construction company in Algeria called 'Cosider' is also one of the promoters of the solution. This company will play a key role in the concrete realization of my project, by providing its technical expertise in construction and even financial, site management and execution of works. It will also be able to offer resources and financial partnerships to support the implementation of the 'SmartUP solution' after the launch of the project. Thus, myself, my (architect) friend, and the construction company in Algeria act as promoters of the 'SmartUP solution'. As a team we work together to transform the idea into reality, each bringing our specific skills, whether strategic, creative or technical, to ensure the success of the project. I am responsible for the overall vision, defining long-term goals, developing action plans, and I have been encouraged by a stage of assistance in finding funding.

Set priorities by identifying the most important actions to move the project forward, manage risks by anticipating obstacles and implementing solutions to minimize risks. I will also be in charge of finding investors or financial partners to support growth and have an inheritance income, also making key decisions one of him (Cosider construction company in Algeria).

Focus to bring innovative ideas that make the project unique, functional and aesthetically pleasing. His expertise allows me to design visually appealing solutions: The architect (Bayer Walid) going to imagines design that combine beauty and functionality, meeting practical needs while remaining aesthetic of the application and the web platform since he uses a lot of software for these plans and studies. Professor 'Omar Zorkane', a doctor in civil engineering who supports me, brings solid technical skills on his training and experience in the field of civil engineering allow him to give sound advice on the technical feasibility of my project. His role is to ensure that the proposed solutions are technically viable, safe and meet industry standards.

Our solution is the most effective methods to minimize production or construction costs while preserving quality. Our team relates to two companies in 'Algeria' to keep more solution by here need and develop new option on the solution (Sprong, 2021).

### **2.2.2. Advisers**

My professors at 'IPB' played an essential role in developing this idea. By providing academic and technical expertise, they helped me to structure and refine this project, guiding through by different stages and key education of entrepreneurship.

In addition, 'Cosider' company provides the intellectual support and financial advance to my project. This trust gives me access to financial resources and partnership opportunities that will allow my idea to come reality.

This collaboration represents a significant asset for the success of my business plan by combining technical expertise and financial support. I also benefit from the valuable support previous work stuff a key role in the innovation of my project by providing me with creative ideas adapted in civil engineering managements solutions. here expertise in architecture advises me on best practices in design, sustainability and space management on the application tools, which enriches my approach.

My team and here experience allow me to integrate new perspectives and take into account modern architectural trends and standards, thus giving me a strategic advantage to evolve my project. Together, we form a multidisciplinary team capable of meeting technical challenges, while considering the aesthetic and practical needs of the solutions for professionals.

### **2.2.3. Products and services**

By developing 'SmartUP solution' we propose an intuitive and transparent solution for the management of the projects in the construction industry. Composed of a large bunch of features, our on-demand application is an easy and understandable pivot tool that can be used by all the actors involved in a construction project, to perform optimally during all its phases from the feasibility study to the project closing 'SmartUP solution' supports the company to manage their projects with a broad view using multiple features to support activities as needed.

Each module is implemented according to each client's needs, like a logo – unique configurations. In this sense, in terms of products, there are at least three possibilities: one-off use tailored to the client; use per project; annual payment.

The users of 'SmartUP solution' are all the professionals involved in the construction industries. the CEOs, architects, engineers, drawers, project managers, business managers, accountants, inventory managers, technicians, workers, etc. everyone in his area of preference depending on the features that will constitute the application or our platform.

#### **2.2.4. Mission and vision**

First, to introduce new technologies which help the companies to manage their projects in the best conditions and to achieve customer recognition and stakeholder satisfaction by committing to the highest level of performance with integrity, creativity and a passion for results. To be a global leader in engineering and deliver high value-added quality products and services for the construction industry 'MENA' sector, to grow and expand to the maximum of markets all around the world.

#### **2.2.5. Objectives**

Among the main objectives of this business plan, three stand out. First have a high-qualified and specialized application for the purposes in the field of construction project management, striving to fully satisfy the interests of all stakeholders involved in a particular project, Second facilitate the process of work, communication and exchange of information in a construction project. Finally increase the efficiency and effectiveness of projects using various tools for project management.

#### **2.2.6 S.W.O.T. Analysis**

In this part we identify the strengths of a project by highlighting internal advantages such as the team's expertise, resources, and capabilities. Recognizing these strengths allows project managers to leverage them for better efficiency and performance.

***Project strengths.*** We offer a unique and distinctive construction management platform. "SmartUP Solution" allows our new clients to access advanced project management solutions. Our comprehensive suite of tools makes it easy to cover all phases of construction project management, from planning and scheduling to cost control and project evaluation online, all in one mobile application.

By unlike conventional methods, we introduce a modern, data-driven approach to project management, leveraging real-time analytics and automation to enhance productivity and reduce delays. Central to our strategy is a proprietary database, enriched with market intelligence and historical project data, enabling smarter decision-making and predictive insights. Additionally, our cutting-edge digital tools integrate AI and cloud-based technologies to optimize workflows, improve collaboration, and minimize errors.

With limited competition in this specialized niche, we are uniquely positioned to capitalize on the booming construction activity across the 'MENA'. By combining cost efficiency, technological innovation, and deep market expertise, we provide an unmatched advantage to clients seeking reliable and forward-thinking project management solutions as we are origin from this location.

**Project weaknesses.** As a new market entrant, our start-up faces inherent challenges, including high uncertainty and risk due to fluctuating demand, regulatory complexities, and the competitive nature of the 'MENA' construction industry. Unlike established firms, we currently lack a portfolio of completed projects, which may initially hinder client trust and our ability to secure large contracts. Additionally, operating under tight budget constraints limits our capacity for rapid scaling, extensive marketing.

However, we are turning these challenges into opportunities by adopting a lean, agile approach. By focusing on cost-efficient digital solutions, strategic partnerships, and targeted market penetration, we aim to mitigate risks while proving our value to early adopters. Our flexibility as a start-up allows us to innovate faster than larger competitors, adapting to market needs with data-driven tools and customized services.

**Our Project opportunities.** We are on a mission to digitally transform the construction sector across specially 'MENA' by introducing cutting-edge technologies that make companies more efficient, cost-effective, and competitive. By integrating smart tools, automation, and data-driven processes by this we help construction firms reduce delays, minimize costs, and improve project outcomes.

A core objective is to expand our market share across key 'MENA' economies, including high-growth markets: 'Saudi Arabia, the UAE, Egypt, and Qatar, as well as emerging opportunities in Algeria, Morocco, and Kuwait'. Our phased expansion strategy targets countries with large-scale infrastructure projects and increasing digital adoption, ensuring sustainable growth.

As a new market entrant, building trust is paramount. We achieve this through transparent operations, proven results, and strategic partnerships with local firms. By delivering reliable, innovative solutions, we aim to become the preferred digital partner for construction companies looking to modernize their operations.

Long-term, we envision regional dominance, followed by expansion into new markets beyond MENA region, adapting our proven model to global construction demands.

**Solution offer threats.** The construction sector in the 'MENA' region presents several major challenges that impact technology adoption and business growth. Construction companies often exhibit a traditional mindset and are sceptical of new technologies and innovative management approaches. This resistance stems from risk aversion and entrenched processes, making market knowledge and proof of concept essential for the adoption of these technologies in the current context of political change.

The region faces political and economic instability, with fluctuating oil prices, regulatory changes, and geopolitical tensions creating an unpredictable business environment. Bureaucratic hurdles, including complex permitting processes and slow governmental approvals, further delay projects and increase operational costs.

The competitive landscape is also intensifying, with new entrants introducing disruptive solutions, increasing pressure to differentiate through superior technology, pricing, and localized expertise.

Design tools that accommodate regional volatility and compliance needs, Strategic partnerships by Collaborate with local entities to navigate bureaucracy and build trust and be a start-up with competitive agility, continuously innovate to stay ahead of emerging rivals

But by addressing these challenges head-on, we position ourselves as a resilient and indispensable partner for MENA's and Europe construction digitalization (Hofmann, 2021).

## **2.3. Market Analysis**

Setting up a business without carrying out a proper market analysis is like navigating without a map. The success of a start-up depends on understanding market demand, competition and customer needs. Market analysis provides crucial data to help make informed decisions and reduce risk. Here's why it's essential for a start-up: with my team in this thesis we're trying to explain everything about our innovation.

### **2.3.1. Target market**

After launching our startup in Portugal, we are targeting the construction sector of MENA as the first market to deploy our software. This decision came after a

Analysis done by some of our team members who held important posts and worked in close collaboration with many construction actors from different countries from the MENA region and felt that there is a huge lack of digitalization of this industry and realized that local business became more aware that the ambitious projects cannot be effectively delivered through traditional methods. The time, cost, quality and sustainability improvements offered through digital ways of working at scale become a very compelling reason for a change. What's is an opportunity for 'SmartUP solution' to bring real value to these industries especially in these regions where local companies are still skeptical about using technologies for the management of their projects.

Taking advantage of this situation and using the right approach to help future users to cross the chasm, our company can be one of the leaders of the service providers within the 5 first years after its implementation (Eulitt, 2024).

### **2.3.2. Market evaluation**

The following table shows the potential demand in the 'MENA' markets by the value of planned construction projects. Table 1 present these data.

**Table 1.** The value of planned construction projects by countries in the 'MENA' region

<b>Countries</b>	<b>Digitalization rate</b>	<b>Value of planned construction projects (billion euros)</b>
<b>EGYPT</b>	2,14	165
<b>BAHRAIN</b>	2,52	25
<b>KUWAIT</b>	2,5	102
<b>OMAN</b>	2,5	28
<b>QATAR</b>	2,96	68
<b>SAUDI ARABIA</b>	3,1	298
<b>UAE</b>	3,68	129

Source: Adapted from Middle East & Africa Data Center Construction Market (2023) and Construction Industry: Trends, Forecast and Competitive Analysis 2023-2028 (2023)

According to this research table, Saudi Arabia leads with the highest value of planned construction projects at €298 billion, followed by Egypt (€165 billion) and the UAE (€129 billion). Kuwait, Qatar, Oman, and Bahrain also show substantial investments, with project values of €102 billion, €68 billion, €28 billion, and €25 billion, respectively. Additionally, the digitalization rate varies among these countries, with the UAE ranking highest at 3.68, while Egypt has the lowest rate at 2.14. This data highlights both the economic potential and the varying levels of technological adoption in the region's construction sector (Amadea, 2021).

### **2.3.3. Targeted share**

Within the limits of the availability of information about construction companies and design offices present in the countries of the 'MENA' region we were able to collect this data represented in the tables below, moreover, the actual number of potential customers might be 10 times over because of most companies are not mentioned in the data offered on the web it means that the number of our potential customers can be over 700 000 customers.

In addition, our solution can be used by any building professional construction companies, design offices, engineers, architects, technicians, suppliers. With this being said, their exact number can only be found by carrying out an on-site study, which is part of our strategy by making at first place a census of all the professionals of the building directly on the ground in all the countries of the region by local teams before launching our application. The following table shows the number of potential customers (companies) in different countries:

**Table 2.** The number of potential customers (companies)

<b>Countries</b>	<b>EXISTING CUSTOMERS</b>
<b>EGYPT</b>	2820
<b>BAHRAIN</b>	2546
<b>KUWAIT</b>	4582
<b>OMAN</b>	4302
<b>QATAR</b>	5462
<b>SAUDI ARABIA</b>	12584
<b>UAE</b>	8500
<b>ALGERIA</b>	6500
<b>MOROCCO</b>	4526
<b>TUNISIA</b>	2120
<b>JORDAN</b>	5462
<b>ISRAEL</b>	5648
<b>YEMEN</b>	1254
<b>LEBANON</b>	5468
<b>LIBYA</b>	756
<b>total</b>	72530

Source: Adapted from Middle East & Africa Data Center Construction Market (2023) and Construction Industry: Trends, Forecast and Competitive Analysis 2023-2028 (2023)

In North Africa, Algeria has 6, Saudi Arabia has the highest number of customers, with 12,584, followed by the United Arab Emirates 500 customers, Morocco 4,526 and Tunisia 2,120. In Jordan, there are 5,462 customers in total, with a total of 72,530 potential customers in these countries.

#### **2.3.4. Market trends**

As highlighted in our market analysis, our goal is to provide an innovative solution to the construction sector within the countries in the region of 'MENA' (MENA, 2021). We are focusing on this geographic segment. That solution will bring real value for these industries especially in these regions where local companies are still skeptical about using technologies for the management of their projects. The business plan will market to companies who are interested in digitizing their businesses. It will allow them to customize their own needs by adding different features, making them have a unique tool made for their specific needs based on the projects they are running at a certain period.

After research companies in the 'MENA' region are investing heavily in digital transformation to improve their competitiveness and operational efficiency. This trend is particularly pronounced in sectors such as finance, healthcare, and retail. Adopting modern project management solutions has become essential to manage complex projects and ensure fast and efficient implementation. This growing demand offers significant opportunities for applications like 'SmartUP solution'.

'MENA' region offers fertile ground for project management applications like 'SmartUP solution'. The combination of the market growth, active digital transformation, increasing project management jobs, ambitious government projects and strategic partnerships creates an environment conducive to the adoption of solutions aimed at improving the efficiency and speed of project delivery (Buildertrend, 2023).

#### **2.3.5. Competitors**

An online search using relevant keywords such as "construction project management solutions", "construction software", or "construction project monitoring platforms". construction" was conducted. Analyze the results to identify companies that offer products or services like 'SmartUP solution'.

Table 3 presents the market for project management solutions in the construction sector is marked by the presence of several competitors. Among them, 'Archdesk', 'OOTI' and Contractor stand out for their specific functionalities and innovative approach. Similarly, Forman, Assemble and 'SmartUP Solution'

offer tools tailored to the needs of companies in the sector. Each of these platforms offers a variety of solutions to optimize project management, improve collaboration and increase operational efficiency. By comparing these players, we can identify the strengths and specific features of each solution to help companies choose the tool best suited to their needs. Here's table show our innovative difference against our competitors (McGill, 2022).

**Table 3.** Competitors and comparison.

	<b>Archdesk</b>	<b>OOTI</b>	<b>Contractor Forman</b>	<b>Assemble</b>	<b>SmartUP solution</b>
<b>Typical customers</b>					
<b>Freelancers</b>	YES	YES	YES	NO	YES
<b>Small businesses</b>	YES	YES	YES	YES	YES
<b>Mid size businesses</b>	YES	YES	NO	YES	YES
<b>Large enterprises</b>	YES	YES	NO	YES	YES
<b>Platform supported</b>					
<b>Web</b>	YES	YES	YES	YES	YES
<b>iPhone/iPad</b>	NO	NO	YES	YES	YES
<b>Android</b>	NO	YES	YES	NO	YES
<b>Support options</b>					
<b>IN person</b>	YES	YES	YES	YES	YES
<b>Knowledge Base</b>	YES	YES	YES	YES	YES
<b>Chat</b>	YES	NO	NO	YES	YES

<b>Email/Help desk</b>	YES	YES	YES	YES	YES
<b><i>Training options</i></b>					
<b>In person</b>	YES	YES	NO	YES	YES
<b>Documentation</b>	YES	YES	YES	YES	YES
<b>Phone</b>	YES	YES	YES	YES	YES
<b>Online</b>	YES	YES	YES	YES	YES
<b>Video tutorials</b>	YES	NO	YES	YES	YES

Source: adapted from Nikmehr et al (2021)

### 2.3.6. Competitive advantages

Being aware that each project is unique, our start-up will also have a role as a consultant in the field of construction, by doing a good analysis on the needs of our customers and therefore making tailor-made programs for each project and each company considering its direct and indirect environmental factors. Our key strength will be the offering of tailor-made solutions to customers that will help them to manage their projects in the most optimal way possible.

Finally, by targeting local companies from the middle east and north Africa who are still using the incremental ways of work, 'SmartUP solution' will bring value to these companies by introducing a new way of managing projects which will save them money and time quite considerably and this will increase their efficiency on all levels legal, economic or technical. This application will be the weapon that will be used to compete for the market share with the foreign companies that have already started to use these kinds of tools.

**User friendly.** Easy to use interface and navigate and provides a wide range of features to select and pick, compatible with any browsers, tablets, phones to facilitate communications with clients and partners, our application is All-in-one Construction software in which everyone and professionals in the construction management field can use it to optimize their work and bring support to them.

**Adjustable pricing.** The price is adaptable depending on the selection of different features which gives the End User Full control over different preferences and eliminates the undesirable features in which he will be charged only depending on how many features our clients select and then we customize and deliver their needs.

**Collaborative stakeholders.** We are more inclusive in our target markets; we send people to these markets to know the market needs and fulfil their demands. Personal relations are extremely mixed with work environments in the Middle East which is why we prefer physical contact with our clients, our relationships with our clients are connected and we offer our consultant and customer services to them. One of our main advantages is that we offer our clients the privilege to different Database of supplies of construction to review (Barrows, 1979).

### 2.3.7. Benefits to clients

We propose through this application a basic version that is composed of the essential features needed for the management of building projects and more additional features that can be added following the demand of the client. The options that we are proposing are the following:

**Scheduling tool (Included in the basic version).** This feature will help the project manager to plan, monitor and control the project schedule, manage the tasks and events for projects and employees with flexibility. Assign tasks to the employees and set them a priority visible in the GANTT chart. This scheduler, also compatible with Microsoft projects, gives an insight into resource planning. It supports maximizing time by noticing the gaps and easily adjusting.

**Cost control tool (Included in the basic version).** This feature will allow the project manager and the top management to control, plan estimates and approve budgets, forecast costs, and make sure approved contracts don't go over their limit, track their status, timeline, and receive invoices.

**Supplier management and supplier database.** This feature is an updated list of the best suppliers in the construction field who are offering services and products in the country where the project is implemented, the company will have easy access to find any supplier and all the information about him and what he is proposing in two clicks. This tool can be a direct bridge between the construction companies and the suppliers of this field where the contact can be done directly through the application.

**3D Drawing viewer (Included in the basic version).** Using BIM technology (Building information modelling). This tool is used to store and share all the drawings related to projects (architecture, HVAC, Civil engineering). This tool will facilitate sharing the updated drawings between all the actors involved in the projects and gives easy access to those updated documents accessible from anywhere. For example, if an architect changes something inside the initial plans the application will notify the persons whose work

will be affected by these changes and allow them to check through the application directly the updated drawings. This feature will be compatible directly with design software like Autocad.

**Communication tool.** With this tool, every person in the company will have a unique ID, and it will be a platform to share all the information about the projects and the coordination between the team members. This tool can be used by the managers to give instructions to their teams and to teams to send reports to their managers and to all stakeholders.

**Daily report tool.** The reporting feature gives the company insight into all the necessary information through custom dashboards and detailed high-level reports, whether it be about a specific project or for the whole company. Using pictures and voice records reports can be viewed and downloaded in several different formats, giving all the necessary information.

**Assets management.** The solution allows any construction company to easily manage all its assets, such as your cars, machinery, tools, and organize the use of it to make sure that it is available for any team at specific times.

**Documents management.** With this feature, the company will manage all its files in one place where all the documents related to the projects are stored and accessible from anywhere. what's make it easily accessible by the right staff in the right department.

**Procurement.** This feature allows the company to plan, execute and control purchasing materials and labour for their construction projects.

**Tender & Bidding management.** Associated with the supplier feature, this tool can be used by the company to manage tenders and bid requests with ease, drafting tenders from the dedicated, automated tendering platform. The company can define the tender rules, details, and attach any necessary information to it and finally use Tender Offer Analysis to compare offers submitted for a tender and pick the winner.

**Maintenance.** After the delivery of the product, the client can report with this tool if there is any problem with the final product and it can allow the company to intervene as quickly as possible to repair the faults

**Best practices (Included in the basic version).** Updated information database about the best practices and latest technologies used in the construction and tips and advice for the company to perform optimally. Also, the latest news about the construction environment in the country where the company is implemented (Kai-Wai Chu & Kennedy, 2011).

## **2.4. Marketing / sales strategy**

A good marketing and sales strategy help to understand the target market, identify customer needs from position our product effectively. In this section we will show you our marketing and sales strategy for 'SmartUP solution' project.

### **2.4.1. Income**

'SmartUP Solution' is an all-in-one application designed to meet the needs of the construction industry, simplifying project management with all the functionality in a single application. We're not just a project management application. Our unique approach, focused on managing construction companies through new methods and approaches, gives us an edge over our competitors by offering our customers an entirely new experience for managing projects, right from the planning phase, in real time and anywhere in the world. 'SmartUP Solution' covers all the needs of construction companies worldwide.

"SmartUP Solution" offers a new experience for managing projects, starting right from the planning phase, in real time and from anywhere in the world. It addresses all the needs of construction companies globally, providing a comprehensive solution that simplifies and streamlines project management. By optimizing processes, SmartUP Solution helps companies save both time and money, enhancing overall efficiency and profitability.

### **2.4.2. Marketing strategy**

In order to gain and maintain advantage over our competitors, we have used the Marketing Mix Model which helped us to choose the right combination of product, price, promotion, and distribution (place). By analyzing each component, we can assume that our product brings value with its innovative approach and outstanding features together with our strategic pricing which allows the client to choose from different versions and not get paid for features which will not be in use. In terms of distribution -as we are offering an application, our main approach to be found is our official website page and some of the most known authorized application sellers where our clients can download our application and start managing their projects. Last but not at least, we understand the importance of promoting our solution in the best way possible and we have highlighted the channels that we will use in order to become recognizable – our marketing campaign will start with the launch of our official website, going through social media and SEO optimization. Moreover, physical interaction is also important as it helps earn loyalty and trust faster, and due to this reason, our company will participate in associations, different networking events and also will be presented by different salesmen in order to attract more and more clients.

Table 4: table shows project details

<b>Product</b>	<b>Price</b>
<ul style="list-style-type: none"> <li>• All-in-one project management tool</li> <li>• More than 20 features for planning, scheduling, communication</li> <li>• One basic version</li> <li>• Create your tailor-made version</li> <li>• Upgrade, customize and adapt it to your needs</li> <li>• Unique database of suppliers</li> <li>• High cyber security and data protection</li> </ul>	<ul style="list-style-type: none"> <li>• Market-oriented pricing strategy</li> <li>• Subscription</li> <li>• Buy only what you use pricing strategy</li> </ul>
<b>Place</b>	<b>Promotion</b>
<ul style="list-style-type: none"> <li>• Official website</li> <li>• Authorized application sellers</li> </ul>	<ul style="list-style-type: none"> <li>• Web/App design</li> <li>• Social media</li> <li>• SEO</li> <li>• Associations</li> <li>• Networking</li> <li>• Salespeople</li> </ul>

Source: adapted from McDonagh et al (2011)

‘SmartUP Solution’ offers an all-in-one project management tool with over 20 features designed for planning, scheduling, and communication. The product comes in a basic version, with the option to create a tailor-made version tailored to specific needs. Users can upgrade, customize, and adapt the tool to fit their requirements, and benefit from a unique database of suppliers. The solution also ensures high cybersecurity and data protection from 2026.

### 2.4.3. Pricing

#### Plans and Monthly Pricing

‘SmartUP solution’ offers flexible pricing depending on the number of users and the specific needs of the companies we propose Basic version offer for small teams, Standard version for companies with more than 20 users and Premium version for organizations with up to 50 users.

prices represent the base price for each version. However, the cost can be adjusted according to additional options requested by the client, such as: Advanced reporting and analysis features, Additional cloud storage, Integration with other professional software and Customization of the user interface

‘SmartUP solution’ adapts to the requirements of companies of all sizes, offering them a scalable solution for optimized project management.

#### 2.4.4. Advertising and promotion

One of the challenges in our marketing strategy is to promote our application in such a way that we can stand out from our competitors. Our marketing strategy for promoting can be separated into two parts: online marketing and in-person marketing.

**Online marketing** (official website page and App). Creating an outstanding website is crucial for our company as all social media pages will lead our customers to our website page. This is the moment where our customers learn about our business and what we offer. Our website is the face of our website. There are 5 points on which we will focus to create a great website and application:

**Fast**, customers like fast loading pages, otherwise they lose patience and interest in the product

**Clear**, the content needs to be simple and functional, easily guiding our customers to understand and get the services they are looking for.

**Mobile**, having a mobile-friendly version is crucial as most of the people are using their phones to find contractors, for example.

**Professional**, our website needs to have a professional vision and be updated regularly by the relevant team

**Secure**, security has been crucial for customers as they expect their data to be protected; for this purpose, our website will obtain an SSL certificate or security certificate. Without this certificate, Google will not rank our website, i.e. will not show up our website on the first page.

**Communications** (social media and email marketing). We will leverage social media and word of mouth for most of our marketing using platforms such as LinkedIn, Facebook, Instagram, Online magazines, Blogs and Forums. These platforms are widely used by the customers in our market. We need to be known, liked and trusted to gain our customers. Having a powerful online message in today's market creates credibility. It is important that we keep our website and social media pages active, using the process of creating messaging around "problem cause solution benefit" – this means leading with the problem that our clients are dealing with, educating them why they are having it and giving them the solution, they need and the benefit from working with us. We will make announcements via regular posts and updates to our pages on these social platforms. We will use our email marketing list to send alerts when we release new features or when we have new updates. We have segmented our email list so that we can send appropriate emails to our customers.

Each of our postings to social media sites will include a trackable link to our website or to the page where they can download the app. We need to know how many people click on each post. Using online tools

like link redirectors, we can also see how many readers and followers repost or forward such links. We will also include trackable links within our email marketing messages.

**In-person marketing** (networking, sales). Our strategy from the beginning will be to do it on our own by participating in different associations that usually meet once a month, once a week, or simply participating in networking events regularly. This is important to us as we are geographically segmented – in the region of ‘MENA’, in particular countries such as Egypt, Morocco, Algeria, we have same connection we need to be visible in the environment of these countries as this increases the possibility of us getting value from that environment.

**Table 5.** Marketing Expenses by Month

Marketing expense budget.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year (1)
Advertising budget (Euro)	0	0	0	0	4763	4763	4763	4763	4763	4763	4763	4763	38100
SEO and analytics (Euro)	0	0	0	0	1000	1000	1000	1000	1000	1000	1000	1000	8000
Other (Euro)	0	0	0	0	500	500	500	500	500	500	500	500	4000
Total marketing expense (Euro)	0	0	0	0	6 263	6263	6263	6263	6 263	6 263	6 263	6263	50100

The biggest amount of our budget will be spent on Advertising, followed by SEO and analytics and the least expenses we have planned to spend on other side marketing activities) Below is a breakdown of marketing expenses by month for Year 2024 for total expenses: 50.100,00 (**Euros**).

**2.4.5. sales strategy**

After analyzing the prices proposed by our direct competitors, ‘SmartUP Solution’ is willing to introduce its application to the markets with the following prices, a basic version starting from 129 €/month with additional fees for every feature added. for each other option which has about

The prices were set considering the benchmark and also considering the costs of the development of the application including the costs of the internal development team, the cost of licenses for the application to be compatible with design and drawing software, as well as the costs of using the Cloud. Finally,

by selecting all the options the customer will have to pay between 320€/month and 461€/month which remains very competitive prices on the market, and very affordable compared to the added value offered by our application. The following tables present the pricing strategy of 'SmartUP solution'.

**Table 6: Pricing Strategy**

Features	Up to 10 users	Up to users	Up to 50 users	More than 50 users
<b>Basic version</b>	129 €/month	169 €/month	229 €/month	On demand
<b>Supplier management and supplier database</b>	80 €/month +	80 €/month +	80 €/month	
<b>Communication tool</b>	5 €/month +	8 €/month +	15 €/month +	
<b>Daily report tool</b>	10 €/month +	12 €/month +	18 €/month +	
<b>Asset management tool</b>	12 €/month +	15 €/month +	18 €/month +	
<b>Documents management</b>	10 €/month +	12 €/month +	15 €/month +	
<b>Procurement management tool</b>	12 €/month +	15 €/month +	18 €/month +	
<b>Tender &amp; Bidding management tool</b>	50 €/month +	50 €/month +	50 €/month +	
<b>Maintenance management tool</b>	12 €/month +	15 €/month+	18 €/month +	

This pricing table outlines different subscription plans based on the number of users and additional features. The basic version starts at **129 €/month** for up to **10 users**, **169 €/month** for a higher user limit (not specified), and **229 e€/month** for up to **50 users**.

Table 7: Competitors Different Pricing

	<b>Archesk</b>	<b>OOTI</b>	<b>Contractor</b>	<b>Assemble</b>	<b>SmartUP solution</b>
<b>Pricing model</b>	Subscription	Subscription	Subscription	Subscription	Subscription
<b>Pricing</b>	Basic: up to 5 users 449 euro per month  Enterprise: individual pricing	Starting from 14 euro/month  Per feature	Starting from: 49 euro/month  Pricing is per company (not per user)	169 euro/month for small collaborations	Starting from 129 euro/month for the basic version
<b>Free trial available</b>	NO	YES	YES	NO	YES
<b>No Credit card required</b>	NO	YES	YES	YES	YES
<b>Free account</b>	NO	YES	YES	YES	YES
<b>Subscription based</b>	YES	YES	YES	YES	YES

The construction project management software market is diverse, offering a range of solutions for construction companies of all sizes, specialties, and budgets. Choosing the right project management software. November 15, 2023. These distinctive features are helping ‘SmartUP Solution’ to position itself as a potential leader in the construction project management market, by providing an innovative response to the industry’s current challenges.

## **2.5. Research & Development**

We started our research by doing some surveys with some actors in the construction industry in 'Algeria, Tunisia, and Egypt'. Therefore, we have made some phone calls interviews with five architects, eight engineers, and three entrepreneurs from these countries. So, we conducted our interview by asking the following questions: have you worked on several construction projects? In your opinion, what are the black spots of project management in your countries?

Their answers were more (or less) the same, the majority stated that most of the housing construction programs are seriously delayed or over cost, the same goes for many other major infrastructure projects. Depending on the nature of the project, several reasons can be put forward to explain the delays and the over costs, but it is the management of the projects that is singled out each time.

Others related the construction project's failures to the poorness of the primary studies and estimations. while most of them stated that Project management in the construction field is still following the old way. They said that we often come across risks and unforeseen events, we always wait for the arrival of problems to resolve them.

First, we propose new technology offering all the tools that company need to manage here projects properly, response: 50% responded YES (8 prs) ,37.5% responded NO (6 prs) , 12.5% responded it depends (2prs). Then we asked about the reason for the disagreement of some of them and the hesitation of the others. They said that these your applications are already proposed but they are not properly adapted to our systems, in addition, compared to the countries of the Arab gulf where the digitization of the sector is starting to be a very developed in IT. In our view, we proposed an application (demonstrating for them all our features), easy to use, 100% inclusive, and updated taking into consideration your business environment while having support by formed professionals from your countries that will help you to implement it would you try it: 82 % of them responded YES (Laws et al., 2013).

### **2.5.1. Patents, copyrights and brands**

First of all, it is essential to check the availability of the name 'SmartUP Solution' via the National Register of Legal Persons (*Registo Nacional de Pessoas Coletivas*), to ensure that it is not already registered by another company. Once this has been checked, the next step is to protect the trade name, logo and any other intellectual property by filing an application with the INPI (Instituto Nacional da Propriedades Industrial). This guarantees exclusive legal protection for the name and elements associated with the company. At the same time, you need to obtain a Tax Identification Number (NIF), which is essential for any commercial activity in Portugal. This number can be obtained from the Portuguese tax authorities. Next, registering the company with the Social Security system is a key step in meeting social obligations,

particularly with regard to social security contributions for employees and managers. Finally, it is important to open a business bank account and choose the right legal structure for the business, such as a limited liability company.

### **2.5.2. Product and service development**

Throughout the development of 'SmartUP Solution' products and services, each member of the project team plays an essential role, actively contributing to each step of the process. The development approach is collaborative, involving different skills and expertise to ensure that the application perfectly meets the specific needs of the construction industry.

Me as a civil engineer with 3 years' experience in the construction field starts by **identifying market needs** by carrying out in-depth market research, interviews and surveys with potential users. This phase collects crucial information on the challenges faced by construction professionals. Next, IT works on creating the all-in-one application, integrating necessary features such as planning, project management, communication and supplier management.

Lading by the team the developer and me as a civil construction engineer, we focus on the programming and integration of features. Priority is given to a clear and intuitive user interface, and careful attention. the application before it goes to market. Our online support also ensures that the tool is flexible, allowing each user to adapt the application to their specific needs.

Important, we have a forum and chat facility which ensures that users always benefit from continuous online technical assistance via chat and telephone, while guaranteeing regular updates of the application to meet changing market and technological needs. 'SmartUP Solution' ensures that it provides an innovative product that is perfectly adapted to the challenges of the construction sector, while remaining flexible in the face of future user needs.

### **2.5.3. I&D (Innovation and Development of 'SmartUP solutions')**

'SmartUP Solution' has strong potential due to its AI-driven approach, marketplace integration, and real-time collaboration. However, market penetration, supplier engagement, and cybersecurity will be key challenges. By focusing on differentiation, partnerships, and user education, it can become a leading platform in construction tech.

'SmartUP Solution' competitive advantage lies in its seamless integration of cutting-edge technologies and user-centric design. By leveraging AI and advanced data analytics, the platform enhances critical decision-making processes while optimizing resource allocation and enabling predictive maintenance

Key differentiators in the construction tech space. Its dual-platform accessibility (iOS & Android) ensures broad compatibility across mobile devices, maximizing convenience for field teams and office managers alike. 'SmartUP Solution' platform specialized marketplace acts as a centralized digital hub, revolutionizing procurement by directly connecting suppliers and buyers, reducing delays, and improving cost

efficiency. Complementing these features is an **intuitive, user-friendly interface** designed to minimize training time and accelerate adoption.

The platform is combined with a mobile application available on iOS and Android for civil engineering and construction companies. Its objective is to revolutionize project management by offering an efficient digital solution for planning, resource management and real-time collaboration.

'SmartUP solution' offers an intuitive and efficient interface to allow companies in the sector to order materials and equipment with ease. We use advanced technologies such as artificial intelligence and data analytics to improve user experience. 'SmartUP solution' is a digital platform that allows civil engineering and building construction professionals to access a specialized marketplace. It aims to simplify commercial transactions between suppliers and buyers by offering optimized digital solutions. A robust yet user-friendly collaborative project management software solution is the holy grail of most project managers.

The development of the 'SmartUP platform' is based on a methodical approach adapted to the specificity of the construction industry. The initial phase of our study consisted of an in-depth analysis of technical requirements. The technical architecture is based on a modular micro services structure, with components dedicated to authentication, project management, the marketplace, and AI.

For the mobile version, it optimizes both costs and performance. The design ensures seamless use even on underserved construction sites. The marketplace module integrates sophisticated APIs for managing material orders, with advanced features.

**Efficient Project Scheduling.** 'SmartUP solution' project is structured around four main phases spanning 9 to 12 months. The first phase (weeks 1-4) of discovery and planning includes stakeholder workshops, a technical feasibility study focused on BIM compatibility and offline requirements. This phase concludes with the production of a detailed product requirements document.

The core development phase (months 2-6) is organized into three successive sprints. The first sprint (weeks 5-8) focuses on implementing the micro services architecture and designing the database. The second sprint (weeks 9-12) develops the mobile application with offline synchronization and an interface adapted to construction site conditions. The third sprint (weeks 13-20) finalizes the marketplace APIs and integrates computer vision for progress tracking.

Simplify project planning by organizing and assigning tasks swiftly, establishing clear timelines, and optimizing the utilization of resources, equipment, and materials. Leverage resource information, Gantt Charts, project management software filters, and a host of other scheduling and analysis tools.

**Strengthened Collaboration.** Enhance team communication and collaboration with shared dashboards, real-time feedback mechanisms, document sharing tools, email integration, mobile notifications, and more. opt for software that is accessible on mobile devices and offers customizable resource access rights.

**Real-Time Monitoring.** Gain instant visibility into project status, identify potential delays, and make informed decisions with real-time tracking and analytics. Collaborate with your team to pinpoint project bottlenecks (such as task or resource constraints) and optimize processes accordingly.

## **2.6. Staffing and operations**

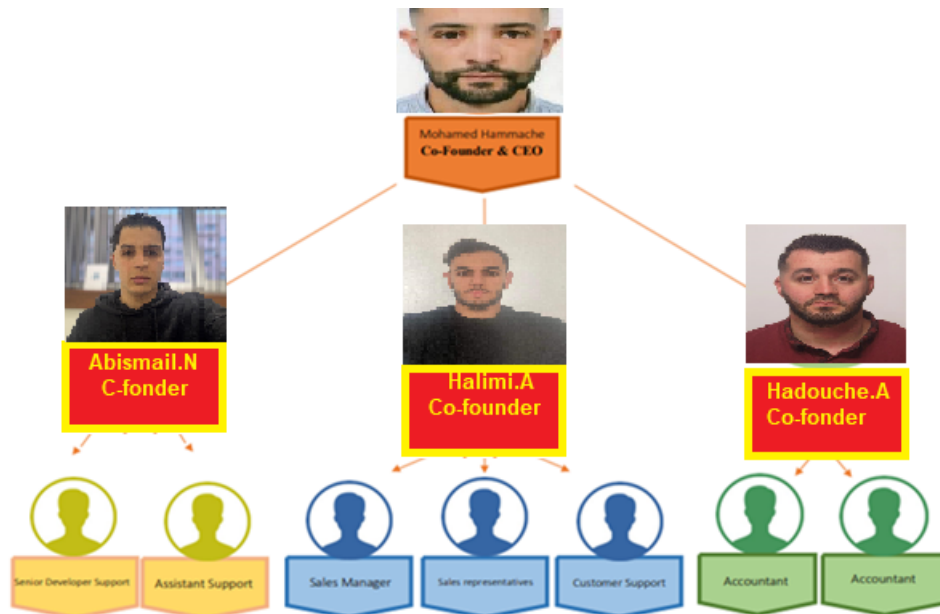
The Staffing and Operations component plays a central role in the success of our 'SmartUP Solution' project, which is primarily an innovative construction project management platform. Our staffing enables us to put together a team with skills that are perfectly aligned with the complex technical requirements of the project: a developer specializing in micro services architecture, experts in mobile interfaces adapted to construction sites, and an IT engineer to ensure the scalability of the infrastructure. This structuring of human resources needs to evolve dynamically as the project progresses, requiring detailed management of skills and headcount.

### **2.6.1. Management organization chart**

After analyzing the organizational objectives and forecasting our HR demand of our company by defining the kind of talent and skills we want to have as well as the number being optimized to reduce the costs. Furthermore, we set up a roadmap to identify when is the time for every action such as the recruitment, training, or transitions. For this purpose, we will set specific goals, with a timeline, and define concrete actions for each goal, with a due date.

Concerning the recruitment and the skills requirement, the recruitment of our sales representatives will be done taking into consideration many factors but there is one important condition is that our future collaborators must have an educational background in the construction field (architects, engineers), because their mission won't be just promoting the product but also assisting the clients , defining their needs and collecting the data, so for that purpose a minimum of technical skills is required from our company. Our Strategic Human Resource Management is to ensure that HR strategy is not a means but an end in itself as far as business objectives are concerned.

## 2.6.2. Staffing



**Figure 1.** Staffing of 'SmartUP solution'

## 2.6.3. Training plans

To raise funds, we use our investment as team stockholder, and we will open our capital to Business angels. Investor angels are people who invest their money in the initial phase of startups, in exchange for participation in capital. We believe this is a good strategy as Business angels usually carry out the role of a mentor and offer their consent and experience to entrepreneurs.

As a start-up company, it is important for us to receive support other than a financial investment. Business angels have a closer role to the company and also monitor the project more closely. Such investors often simulate the figure of a mentor or guide, who decides to dedicate their experience and knowledge to the service of entrepreneurs. Once a business angel commits to a startup, he or she provides a key initial financial base from which to start providing the service/goods of the project. In addition, when the business angel already enjoys a reputation in the industry, its connection to the startup tends to have a positive external image and gives the project credibility which we aim to achieve in our company.

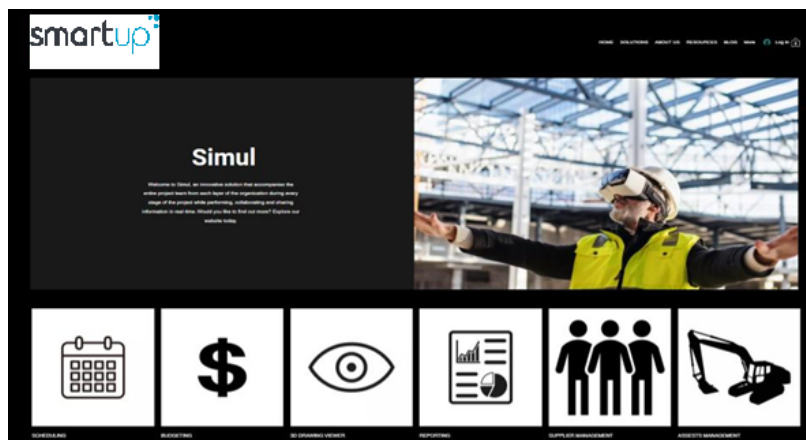
**Table 8:** Initial investment.

Investor Funding	Estimated (EUR)
Mohamed Hammache	10,000 €
Hadouche malak	10,000 €
Halimi aziz	10,000 €
Abismail nacer	10,000 €
<b>Total</b>	<b>40,000 €</b>
Investors Funding	460,000 €
<b>Total Funding</b>	<b>500,000 €</b>

#### 2.6.4. Operations

**Figure 2.** Website Home Page

Our Website web will be developed by our IT using Jira software



**Mobile version:**

Mobile IOS

**Figure 3.** Application icon on IOS



By using Smartsheet, which is designed for complex projects requiring rigorous monitoring and real-time reporting (Smartsheet, 2023).

**Figure 4.** Overview Menu

**Features menu.**

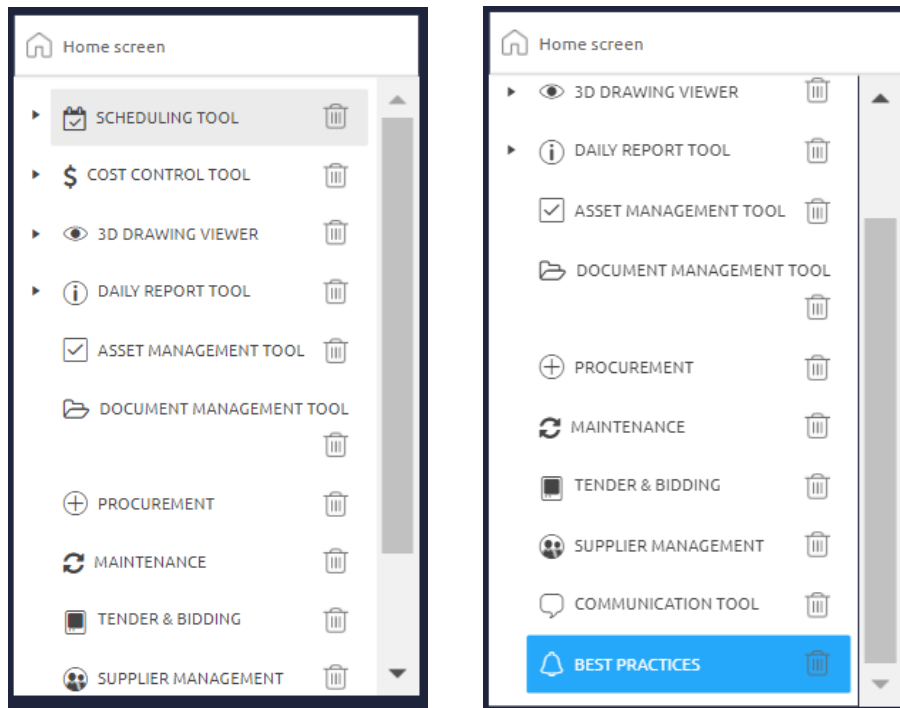


Figure setup by using Smartsheet (Smartsheet, 2023).

**How it works?** To configure your own project management software that accommodates any project management methodology, 'SmartUP solution' teams have established a specific five-step methodology:

**Requirement Analysis.** Gather and analyse the specific needs and objectives of our project to ensure the software meets all requirements.

Define a Bill of Specification for our Scheduling Software.

During my consultation with the 'SmartUP solution' team, we discussed our needs, including the types of projects you work on showing some interface example and software to use to develop our project.

**Design and Configuration.** Focus to create a customized design and develop the software based on the identified requirements and chosen project management methods.

Following the initial consultation, one of our consultants will configure the software based on software developed and unsure the important requirements. The goal is to deliver scheduling software within the expected timeframe. This step includes thorough testing to ensure optimal performance.

**Testing and Validation.** Conduct thorough testing to ensure the software functions correctly and meets all specified criteria.

Deploy our project management software and integrate it with existing systems, providing training and support to ensure smooth adoption.

**We are available to** continuously monitor the software's performance, gather user feedback, and make necessary improvements to enhance its functionality and efficiency.

'SmartUP solution' teams have developed an application to let our users have access to their construction planning wherever they are. Thereby, we will have the possibility to change the status of all tasks, send any type of feedback from the field and have access to information in real time.

We will be able to see key information briefly, going from the completion of soft tasks via our status management system (on going, achieved, scheduled) to the notification of identified delay problems from each project.

By integrating our construction scheduling software with 'smartsheet technology tools', we will avoid error and double entry.

Some of our future clients, have requested an integration with 'Sage, SAP, Oslo, Office. Microsoft dynamics' like we can see in the figure below:

**Figure 5:** Available in 'SmartUP solution'



## 2.7. Financial plan

The 'SmartUP solution' is proving to be a promising project with strong profitability potential. It addresses major challenges in the construction industry, such as cost overruns, poor resource management, and a lack of real-time progress monitoring—widely recognized problems that require urgent on-site solutions.

Our solution's strengths in automation, real-time tracking, and efficient project management are perfectly aligned with the growing market demands for digital transformation in the construction industry. Despite challenges related to user adoption and competition, effective training, the use of a simple and intuitive application and platform, strategic partnerships, and solid technical development can address these challenges. Overall, thanks to its clear tool offering and scalability, the "SmartUP" solution is well positioned to generate strong financial and operational returns in the civil engineering market. The financial plan will be presented in detail in this section.

### 2.7.1. Assumptions

IT spending in the 'MENA' region increased dependency and implementation of online solutions and the increased implementation of virtual workspace during the pandemic, it is evident that this will remain present post-pandemic.

Utilizing a more proximate approach to our customers we will identify the main desire of the clients to offer them the congruous services for their projects, some of our features are unique and are not proposed by any competitor as the suppliers' database that we are proposing to respond to the desideratum

of the construction companies in the 'MENA' countries, Below is a specific illustration of 'SmartUP solution' Sales Forecast for the next 3 years, We expect the sales to be increased in the second year by 90% and in the third year by 40%, Determinately, by having a differentiation strategy in these markets while keeping our prices low we are seeking for more preponderant market shares and increase our existence in all Europe. Furthermore, our forecast is starting with potential customers as construction companies and design offices in the 'MENA' region. Our collaborator as an accountant, as well as thanks to all my professor my training on entrepreneurship at IPB, we were able to analyze and obtain the financial results of our project. This collaboration allowed us to accurately assess the costs, revenue forecasts and potential profitability of our initiative. By combining our skills in financial management and entrepreneurship, we developed a solid strategy to ensure the economic viability of the project and optimize the available resources.

### **2.7.2. Sales Forecast and costs**

The products available (software platform) to commercialize on the web are based on engineering and construction solutions relying on Apps that support them in their main daily activities in construction. On Table 10, it is possible to understand that in the first year the total sales are around 170,000 euros, divided by the 3 main versions of the app that are available to customers.

**Table 9.** Sales forecast for the first year.

	Quantity per month	Price per unit	Quantity	total
<b>Basic Version (10 Users )</b>	25	199 €	300	59 700,00 €
Supplier Management and Supplier Database	25	8 €	300	2 400,00 €
Communication Tool	25	5 €	300	1 500,00 €
Daily Report Tool	20	10 €	240	2 400,00 €
Assets Management Tool	20	12 €	240	2 880,00 €
Documents Management Tool	20	10 €	240	2 400,00 €
Procurement Management Tool	20	12 €	240	2 880,00 €
Tender & Bidding Management Tool	20	50 €	240	12 000,00 €
Maintenance Management Tool	25	12 €	300	3 600,00 €
<b>Total</b>				<b>89 760,00 €</b>
<b>Basic Version (20 Users )</b>	20	169 €	160	27 040,00 €
Supplier Management and Supplier Database	20	8 €	160	1 280,00 €
Communication Tool	18	8 €	144	1 152,00 €
Daily Report Tool	16	12 €	128	1 536,00 €
Assets Management Tool	16	15 €	128	1 920,00 €
Documents Management Tool	18	12 €	144	1 728,00 €
Procurement Management Tool	18	15 €	144	2 160,00 €
Tender & Bidding Management Tool	15	50 €	120	6 000,00 €
maintenance Management Tool	20	15 €	160	2 400,00 €
<b>Total</b>				<b>45 216,00 €</b>
<b>Basic Version (50 Users )</b>	15	229 €	90	20 610,00 €
Supplier Management and Supplier Database	15	8 €	90	720,00 €
Communication Tool	15	15 €	90	1 350,00 €
Daily Report Tool	15	18 €	90	1 620,00 €
Assets Management Tool	15	18 €	90	1 620,00 €
Documents Management Tool	15	15 €	90	1 350,00 €
Procurement Management Tool	15	18 €	90	1 620,00 €
Tender & Bidding Management Tool	15	50 €	90	4 500,00 €
maintenance Management Tool	15	18 €	90	1 620,00 €
<b>Total</b>				<b>35 010,00 €</b>
<b>Total Sales</b>				<b>169 986,00 €</b>

To develop the work, the entrepreneur needs to hire 3 workers that will develop the application and marketing and advertising activities. They will also have some administrative costs. The table below shows the main costs and also whether they are fixed or variable for the first year.

**Table 10. Costs Preview.**

<b>Costs</b>		Variable	Fixed	Variable	Fixed
Cost of Sales					
- Workers	74 844,00	80%	20%	59 875,20	14 968,80
- Operating Expenses	30 876,00	70%	30%	21 613,20	9 262,80
Advertising Expenses	8 499,30	80%	20%	6 799,44	1 699,86
Marketing Cost	51 156,00	80%	20%	40 924,80	10 231,20
Administrative Cost	13 920,00	30%	70%	4 176,00	9 744,00
	<u>179 295,30</u>			<u>133 388,64</u>	<u>45 906,66</u>
			% Revenues	78,5%	

**2.7.3. Investments**

The development of this app requires to have some investments, that are on Table 12-.

**Table 11. Initial Investment.**

<b>Investment</b>	
Computers - laptop	12 000,00
Software	12 000,00
Desks	2 000,00
Chairs	2 000,00
Others	2 000,00
	<u>30 000,00</u>

Since the investment in fixed assets are defined, it is necessary to check the salvage value and the working capital related with it (see Table 13).

**Table 12.** Investment and working capital.

<i>INITIAL INVESTMENT</i>	
Initial Investment=	<b>30 000,00 €</b>
Opportunity cost (if any)=	<b>0,00 €</b>
Lifetime of the investment	<b>5</b>
Salvage Value at end of project=	<b>3 000,00 €</b>
Deprec. method(1:St.line;2:DD)	<b>1</b>
Tax Credit (if any )=	<b>0%</b>
Other invest.(non-depreciable)=	<b>0</b>

<i>WORKING CAPITAL</i>	
Initial Investment in Work. Cap=	<b>\$14 941</b>
Working Capital as % of Rev=	<b>9%</b>
Salvageable fraction at end=	<b>100%</b>

Investment	\$30 000
- Tax Credit	\$0
Net Investment	\$30 000
+ Working Cap	\$14 941
+ Opp. Cost	\$0
+ Other invest.	\$0
Initial Investment	\$44 941

#### 2.7.4. Cash Flow Analysis

To understand if the investment is financially viable, it is important to check the cash flows generated by the business. After the first year, the entrepreneur is expecting to have a tremendous increase in revenues and in all operational activities. Panel A of Table 14 shows the main assumptions about the sales and revenue forecasts. Panel B from the same table shows the revenues for the entire period of the project (5 years) and supports the calculation to find the EBIT. It is also possible to find the working capital for the periods to have a broad view of the project.

**Table 13.** Operational Cash Flows.

<b>Panel A: GROWTH RATES</b>						
<b>Year</b>		<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>
Revenues	Do not enter		<b>90,00%</b>	<b>60,00%</b>	<b>50,00%</b>	<b>20,00%</b>
Fixed Expenses	Do not enter		<b>5,00%</b>	<b>5,00%</b>	<b>5,00%</b>	<b>5,00%</b>

Default: The fixed expense growth rate is set equal to the growth rate in revenues by default.

<b>Panel B: OPERATING CASHFLOWS</b>						
		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Lifetime Index						
Revenues		169 986,00 €	322 973,40 €	516 757,44 €	775 136,16 €	930 163,39 €
-Var. Expenses		133 388,64 €	253 438,42 €	405 501,47 €	608 252,20 €	729 902,64 €
- Fixed Expenses		45 906,66 €	48 201,99 €	50 612,09 €	53 142,70 €	55 799,83 €
EBITDA		-9 309,30 €	21 332,99 €	60 643,88 €	113 741,26 €	144 460,92 €
- Depreciation		5 400,00 €	5 400,00 €	5 400,00 €	5 400,00 €	5 400,00 €
EBIT		-14 709,30 €	15 932,99 €	55 243,88 €	108 341,26 €	139 060,92 €
-Tax		-3 088,95 €	3 345,93 €	11 601,22 €	22 751,67 €	29 202,79 €
EBIT(1-t)		-11 620,35 €	12 587,06 €	43 642,67 €	85 589,60 €	109 858,13 €
+ Depreciation		5 400,00 €	5 400,00 €	5 400,00 €	5 400,00 €	5 400,00 €
- ∂ Work. Cap		0,00 €	13 447,15 €	17 033,05 €	22 710,74 €	13 626,44 €
NATCF	(\$44 941)	-6 220,35 €	4 539,92 €	32 009,61 €	68 278,86 €	101 631,69 €
Discount Factor	1	1,0445	1,09098025	1,139528871	1,190237906	1,243203493
Discounted CF	(\$44 941)	(\$5 955)	\$4 161	\$28 090	\$57 366	\$149 927

Based on the discount rate presented on Table 15, it is possible to provide the calculations for the discount cash flow on the previous table above. Because of the investment at the first year, the cash flow is negative, but in the following years it is possible to find very interesting positive cash flows

**Table 14.** Discount rate.

<b>DISCOUNT RATE</b>	
<i>Approach(1: Direct; 2: CAPM):</i>	<b>2</b>
1. Discount rate =	<b>6%</b>
2a. Beta	<b>0,9</b>
b. Riskless rate=	<b>4,00%</b>
c. Market risk premium =	<b>5,50%</b>
d. Debt Ratio =	90,00%
e. Cost of Borrowing =	5,00%
Discount rate used=	4,45%

**Income statements and Balance sheet.** Based on the project ideas developed in the preceding sub-sections, it is possible to find the profit of the future company. Table 16 shows the income statement cash flows. The income statement is jointly presented in the operating cash flow statement, allowing for understanding how the sales and revenues are increasing year by year, which reflects a higher improvement on the EBITDA and EBIT results. This allows to understand how this project is good enough to implement. Thus, the profit is positive and has been increasing since the second year. However, in the first year, the project has lost, which is common in a new start-up business. Because the company does not have bank debt (as shown in Table 17), the income statement does not have interest payments.

**Table 15.** Income statement.

	<i>2026</i>	<i>2027</i>	<i>2028</i>	<i>2029</i>	<i>2030</i>
Sales	169 986,00 €	322 973,40 €	516 757,44 €	775 136,16 €	930 163,39 €
Cost of Good Sold	133 388,64 €	253 438,42 €	405 501,47 €	608 252,20 €	729 902,64 €
Fixed Expenses	45 906,66 €	48 201,99 €	50 612,09 €	53 142,70 €	55 799,83 €
<b>EBITDA</b>	<b>-9 309,30 €</b>	<b>21 332,99 €</b>	<b>60 643,88 €</b>	<b>113 741,26 €</b>	<b>144 460,92 €</b>
Depreciation	5 400,00 €	5 400,00 €	5 400,00 €	5 400,00 €	5 400,00 €
<b>EBIT</b>	<b>-14 709,30 €</b>	<b>15 932,99 €</b>	<b>55 243,88 €</b>	<b>108 341,26 €</b>	<b>139 060,92 €</b>
Interest	1 350,00 €	1 350,00 €	1 350,00 €	1 350,00 €	1 350,00 €
<b>EBT</b>	<b>-16 059,30 €</b>	<b>14 582,99 €</b>	<b>53 893,88 €</b>	<b>106 991,26 €</b>	<b>137 710,92 €</b>
Tax	-3 088,95 €	3 345,93 €	11 601,22 €	22 751,67 €	29 202,79 €
<b>Profit / Loss</b>	<b>-12 970,35 €</b>	<b>11 237,06 €</b>	<b>42 292,67 €</b>	<b>84 239,60 €</b>	<b>108 508,13 €</b>

The Balance Sheet on Table 17 shows the assets and liabilities of this start-up during the first 5 years. This table allows to understand the investment in fixed assets and that, in general, the receivables from customers are around 5% of the sales/revenues. There is no bank debt, and the suppliers are the main partner in the first two years since they are available to receive on credit after a long time.

**Table 16.** Balance sheet.

	<i>2026</i>	<i>2027</i>	<i>2028</i>	<i>2029</i>	<i>2030</i>
Fixed Assets	24 600,00 €	19 200,00 €	13 800,00 €	8 400,00 €	3 000,00 €
Costumers	8 499,30 €	16 148,67 €	25 837,87 €	38 756,81 €	46 508,17 €
Cash	500,00 €	875,63 €	8 066,73 €	85 784,57 €	192 123,45 €
<b>Total Assets</b>	<b>33 599,30 €</b>	<b>36 224,30 €</b>	<b>47 704,60 €</b>	<b>132 941,38 €</b>	<b>241 631,62 €</b>
Shareholder	1 000,00 €	5 000,00 €	5 000,00 €	5 000,00 €	5 000,00 €
Previous year	0,00 €	-12 970,35 €	-1 733,28 €	40 559,38 €	124 798,98 €
Profit / Loss	-12 970,35 €	11 237,06 €	42 292,67 €	84 239,60 €	108 508,13 €
<b>Equity</b>	<b>-11 970,35 €</b>	<b>3 266,72 €</b>	<b>45 559,38 €</b>	<b>129 798,98 €</b>	<b>238 307,11 €</b>
Long term debt	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €
Bank Debt	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €
Suppliers	45 569,65 €	32 957,58 €	2 145,22 €	3 142,40 €	3 324,51 €
<b>Liabilities</b>	<b>45 569,65 €</b>	<b>32 957,58 €</b>	<b>2 145,22 €</b>	<b>3 142,40 €</b>	<b>3 324,51 €</b>
<b>Total equity + liabilities</b>	<b>33 599,30 €</b>	<b>36 224,30 €</b>	<b>47 704,60 €</b>	<b>132 941,38 €</b>	<b>241 631,62 €</b>

### 2.7.5. Evaluation

Regarding the evaluation, Table 18 show the results for the calculation of two main important methods for investment evaluation: NPV; IRR. This project seems to provide a positive net present value of 188 648,11 euros and an internal rate of return of 40,90%. These measures have very good values, which seems to allow us to tell that this is a good investment and financially viable.

**Table 17.** Investment measures

<b>NPV =</b>	188 648,11 €
<b>IRR =</b>	40,90%

## Conclusions

SmartUP Solution positions itself as an innovative, scalable and high added value solution, capable of significantly contributing to the performance, sustainability and digitalization of the construction sector, while guaranteeing a measurable improvement in return on investment for its users.

The main purpose of our project is to offer an innovative solution in the field of project management to construction companies in the region of 'MENA'. We believe that innovation, technology and digitalization are the main drivers of a company's success, thus Smartup solution is a great way to keep track of construction projects and create value for the businesses as they bring the opportunity to modernize and accelerate the process of work in projects and contribute to the creation of a new corporate culture within the businesses.

This business plan covered various aspects of the project, namely: market analysis, commercial and marketing, technical, financial, and legal.

The results obtained allowed us to validate the reliability, viability, and profitability of this project, as long as the criteria of financial profitability are favorable, which reinforces the initial choice of the opportunity idea.

The study helped us to clarify and understand our project better by setting clear goals and objectives. We have managed to identify and analyze not only the business opportunities of our project but also the critical points and the problems that could arise in the way.

What is more, our business plan will serve as a business card for introducing our business to banks, institutions, investors, or any other part involved when it comes time to seek cooperation or financial support of any kind. Finally, we hope that our different analyses will convince investors to invest in our project.

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