

الجمهورية الجزائرية الديمقراطية الشعبية
People's Democratic Republic of Algeria
وزارة التعليم العالي والبحث العلمي
Ministry of Higher Education and Scientific Research
المدرسة العليا لإدارة الأعمال - تلمسان
Higher School of Management - Tlemcen
قسم الطور الثاني
Second Cycle Department



Master's Final Year Project

Within the framework of Ministerial Decree No. 008 amending and supplementing Decree No. 1275, which sets the procedures for developing a final year project for the purpose of obtaining a

"University Degree – Startup Diploma"

Field of Study: Management

Specialization: Healthcare Services Management



Presented By:

Thesis Defense Date:

1/Feitas Hala Ines.	01/07 / 2025
2/Elarbi Ouis Chaimaa	

In front of the jury consisting of:

Full Name	Academic Rank	Etablissement	Qualité
Benbouziane Mohammed	Professor	ESM Tlemcen	President of the Jury
Iznasni Ali	MCA Senior Lecturer (Class A)	ESM Tlemcen	Examiner
Tadj Meziane	Professor	ESM Tlemcen	Supervisor
Bouklikha Yacine	Dr/Director of Economic Affairs, Basic Facilities, and Equipment at the Specialized Mother and Child Hospital in Tlemcen.	ESM Tlemcen	Co-Supervisor1 / Socio-Economic Partner
Iles yamina	Lecturer (Assistant Professor – Class B)	ESM Tlemcen	Co-Supervisor2
Danouni nassim	Doctor	ESM Tlemcen	Incubator Representative

Academic Year: 2024/2025

Information Card:

About the Supervisory Team of the Working Group

1. Supervisory Team:

Supervisory Team:	
Principal Supervisor : Pr ,Tadj Meziane	Specialty : Health care management
Co-Supervisor1 : Bouklikha Yacine	Specialty : Health care management
Co-Supervisor2 : lles yamina	Specialty : english

2- Project Team :

Project Team	Faculty	Specialty
Student : Feitas Hala Ines	Higher School of Management.	Healthcare Services Managemen
Student : Elarbi Ouis Chaimaa	Higher School of Management.	Healthcare Services Managemen

Hala & chaimaa

First and foremost, we give praise to Almighty God, with abundant, pure, and blessed gratitude, for granting us the strength, patience, and determination to successfully complete this work. Without His will and grace, this project would not have come to life

We express our deepest gratitude and love to our dear families, especially our parents, brothers, and sisters, for their unconditional affection, moral support, constant encouragement, and sincere prayers at every moment

We would like to express our gratitude to our supervisors, Professor Tadj Meziane, Dr. Bouklikha Yacine, and Dr. ILES Amina, for their kind guidance, valuable advice, patience, and unwavering support throughout every stage of this project

I also extend my sincere thanks to Mr. Feitas Belkhal, who was a true source of support, a constant guide, and a source of encouragement during the entire project.

We would also like to thank the Incubator of the Higher School of Management for their continuous follow-up, guidance, and the periodic evaluations they conducted to monitor our projects and work.

We warmly thank all the teachers of the Higher School of Management for the knowledge they have shared, the quality of their teaching, and the support they have provided throughout our years of study.

We also thank our colleagues and friends for their support, their advice, and their kind words during this demanding period.

And above all, we would like to take a moment to thank ourselves — for believing in our journey, for staying committed despite difficulties, for showing resilience, and for never

giving up. This achievement is the result of hard work, dedication, and self-discipline. We are proud of the people we have become through this experience."

Thank you all from the bottom of my heart.

Dedication

All praise is due to Allah, first and foremost.

This success is nothing but a gift from Allah, and I would not have reached this stage without his mercy and grace.

To those who, after Allah, played a vital role in this achievement, I dedicate the fruit of my effort and the toil of my days to my beloved parents the embodiment of sacrifice and loyalty.

To my dear sister, who was the heart when my chest felt tight, and the shoulder when the burden grew heavy.

To my brothers, the heartbeat and soul of our family you are my eternal pride.

And to Ines, my dear cousin, I dedicate this work to you in gratitude for your support and sincere affection.

May Allah bless you and grant you happiness worthy of your kind heart.

My partner feitas hala Ines I am truly grateful to have shared this experience with you. To my dearest friends, Fatima Dahmani and Abir Beloufa: Thank you for your constant support and precious friendship. I dedicate this work to you with heartfelt gratitude. may Allah bless you always.

I dedicate this humble work to my esteemed professors, for the knowledge and guidance they provided, which lit my path.

I extend my sincere thanks and gratitude to Mr. Houidach djilali for his valuable time, effort, and advice. May God reward him and grant him continued

Chaimaa Elarbi Ouis

Dedication

In the name of ALLAH

First and foremost, most thanks to Allah forgiving me strength to realize this work;

I dedicate this work to :My parents who have always encouraged me in the path of knowledge;

My sisters and brothers ;my family

My partner Elarbi Ouis Chaimaa

All my teachers at every level

All my class mates and my dear friends Soulef, dohaa ,Nadjet,Hanaa, Nouha,Souad ,Djihane,Hadjira

Everyone who has provided me with assistance and support.

Feitas Hala Ines

Table of Contents:

Introduction	2
Axe one: The presentation of the project.....	4
Project presentation	4
The proposed values.....	8
The team work of HM Platform	11
The objectives of project.....	13
Timeline of project.....	15
Axe two: Innovation aspects.....	19
The nature of innovation.....	20
The fields of innovation.....	22
Innovative aspects.....	25
Axe three: The market analysis.....	26
Strategic Market Analysis.....	26
Market Segmentation.....	26
Business Model Canvas.....	26
PESTEL analysis.....	39
Competitive analysis.....	40
SWOT analysis.....	45
Market Study.....	47
Internal and External Diagnosis	75
7Ps of Marketing for HM Platform.....	77
Axe four: Production and Organization Plan.....	82

Survuction.....	83
Survuction model for HM platform.....	84
Front Office.....	84
Procurment.....	87
Workforce.....	91
Partnerships.....	94
Axe five: The Financial Plan.....	96
Costs and Charges.....	97
The project Opening Balance Sheet.....	101
The Income Statement.....	102
The revenue.....	103
Axe six: Prototype.....	104
Color Palette meaning and intent.....	105
Logo.....	106
Platform Interfaces.....	108 – 122
Conclusion.....	123

List of Figures:

Figure 1: PESTEL analysis	40
Figure 2: there are challenges in maintaining medical equipment.....	49
Figure 3: types of difficulties in maintaining medical equipment	51
Figure 4: time to repair faults or maintain medical equipment	53
Figure 5:the current malfunction reporting process take a long time	54
Figure 6: other responses	56
Figure 7: an existing platform for maintenance and fault reporting currently used.....	56
Figure 8: a digital maintenance platform could help address these challenges	58
Figure 9: features consider essential in a medical equipment maintenance platform.....	59
Figure 10: ability to use a digital maintenance platform if it were available	62
Figure 11: the platform send automatic alerts when the spare parts inventory reaches a critical level .	63
Figure 12: kind of channels should be used to send maintenance alerts	64
Figure 13: roles and permissions can be structured in the platform	66
Figure 14: the platform include schedules for periodic maintenance of equipment	67
Figure 15: are the main factors that influence the decision to determine the cost of purchasing the platform.....	69
Figure 16: the payment system be structured in the platform	71
Figure 17: the main tasks can perform their job	72
Figure 1: servuction model.....	84
Figure 1: LOGO oh HM Platform	107
Figure 2: Login Interface	109
Figure 3: Home Screen / Main Dashboard.....	110
Figure 4: Preventive Maintenance	111
Figure 5: Corrective Maintenance	112
Figure 6: General Menu	114
Figure 7: Option Alarm.....	114
Figure 8: User.....	115
Figure 9: User preferences	116
Figure 10: Corrective maintenance:.....	117

Figure 11: Calendar events:.....	118
Figure 12: Energy Management	119
Figure 13: Add group.....	119
Figure 14: Group	119
Figure 15: Permissions.....	121
Figure 16: Report:.....	121
Figure 17: Create Users:.....	123
Figure 18: Facebook page	123

Introduction

The maintenance of medical equipment plays a **vital role** in ensuring the **efficiency, safety, and overall quality** of healthcare services in Algerian hospitals. As modern healthcare facilities continue to rely on **advanced medical technologies**, the **proper functioning, regular upkeep, and timely intervention** of essential equipment have become more critical than ever. This includes a wide range of devices, from **life-saving machines such as ventilators and MRI scanners to basic diagnostic tools and hospital infrastructure systems**.

Poor maintenance management can lead to **unexpected equipment failures, increased operational costs, and severe disruptions in patient care**, potentially endangering lives. Malfunctioning medical equipment can cause **delays in diagnosis and treatment, longer hospital stays, and an increased burden on healthcare professionals**, ultimately compromising the **efficacy and reputation of medical institutions**. Additionally, inadequate maintenance strategies result in **higher repair costs, difficulties in sourcing spare parts, and challenges in keeping up with evolving technological advancements**.

Given these challenges, establishing an **efficient and proactive maintenance system** is essential for ensuring **continuous and reliable healthcare services**. A well-structured maintenance strategy not only **reduces downtime and optimizes hospital resources** but also **enhances patient safety, extends the lifespan of medical equipment, and ensures compliance with healthcare regulations and safety standards**. Addressing this crucial aspect of hospital management will significantly contribute to the **sustainability and advancement of the health care sector in Algeria**.

What strategies can hospitals adopt to ensure the longevity of medical equipment? What role does open data and knowledge-sharing play in advancing hospital maintenance practices?

First axe

**The presentation
of the project**

➤ **1-Project presentation**

Maintenance is of great importance to all institutions, even new ones, in order to preserve them.

Continuing its activities as normal, as this topic did not take the place it deserves in

Maintaining facilities and equipment, in two interrelated ways: preventive maintenance and interventional maintenance.

Equipment in health institutions is divided into two categories:

- Collective and special equipment for cooling, heating, water network and telephone exchange

And electricity, and that directed to the kitchen and its annexes, and ventilation...

- Medical equipment is of two types:
- Light equipment related to the laboratory, emergency room and operating rooms

And resuscitation and conventional x-rays, in addition to industrial gas complexes to provide oxygen, nitrogen peroxide, suction, pressure and carbon dioxide for laparoscopic surgeries.

- Heavy equipment for CT scans, MRIs, accelerators for cancer treatment, and other complex machines for exploration.

As hospitals are no longer able to undertake maintenance activities for several reasons, especially:

After the dissolution of the National Medical Equipment Corporation in the mid-nineties, since it was taking

It is responsible for the tasks of acquisition, installation, follow-up, and provision of after-sales services and spare parts, on the one hand, and on the other hand, training competent engineers for the supplying companies.

In the absence of this important institution, the door was opened to ijtihad, which did not succeed in compensating for these distinguished scientific energies, especially after they retired.

On the other hand, Algeria has witnessed an unprecedented openness to the import market and the equipment stock has expanded, which was previously limited to some European and Asian countries.

To many countries from all continents, which created a major problem in emergency cases.

To provide spare parts, update software for equipment and keep pace with rapid technological development.

1.2-Solution

To combat the challenges associated with equipment maintenance in healthcare institutions and ensure the seamless operation of medical facilities, we have developed an advanced **HM platform (Healthcare Maintenance Platform)**. This groundbreaking solution serves as a vital safeguard, aiming to streamline maintenance processes and enhance the efficiency of healthcare institutions.

The **Healthcare Maintenance Platform** is an intelligent and comprehensive system that integrates automation and digital management tools within a secure interactive network.

Designed to support the healthcare sector, this innovative platform facilitates preventive and interventional maintenance, ensuring the longevity and optimal functionality of essential medical and facility equipment.

This advanced system consists of a centralized unit responsible for collecting and managing data related to equipment maintenance. It allows for the classification and inventory of equipment, the exchange of expertise, and real-time reporting of risks, malfunctions, or manufacturing defects. Additionally, ensuring continuous skill development for maintenance professionals.

Through an intuitive and user-friendly application, institutions can efficiently monitor their maintenance activities, coordinate repairs, and maintain compliance with evolving technological standards. By fostering collaboration among healthcare professionals, technical experts, and industry partners, the **Healthcare Maintenance Platform** provides a seamless, secure, and future-ready solution for the healthcare ecosystem.

One of the key factors in the success of this initiative is the emphasis on the human element—investing in skilled personnel, increasing the allocated budget for maintenance, and ensuring continuous training to keep pace with technological advancements.

HMPLATFORM (Hospital Maintenance Platform) is an electronic system designed to manage and monitor maintenance operations in healthcare facilities.

This solution aims to address the issue in the following way:

- Implementation of a secure interactive network
- Digital reporting of medical equipment failures
- Execution of both corrective and preventive maintenance
- Creation of dedicated files for equipment types, classification, and inventory
- Maintenance of an open platform for continuous addition and improvement

1.3-The field of the project:

The project is an technical within the field of **Healthcare Facility Management and Equipment Maintenance**. It integrates elements of **automation, digital management, and safety systems** to deliver an innovative and intelligent solution for the maintenance and monitoring of medical and facility equipment. By leveraging smart technology and interactive platforms, the project enhances efficiency, ensures equipment reliability, and optimizes resource management within healthcare institutions

1.4-Project Overview:

The primary objective of the **Healthcare Maintenance Platform** is to provide healthcare institutions with an advanced and reliable solution for equipment maintenance, ensuring optimal performance, safety, and operational continuity. This is achieved through the development of a state-of-the-art digital platform, integrating high-quality automation tools and data management systems. The project leverages the expertise of professionals

in the field to create an efficient and intelligent solution that incorporates **Internet of Things (IoT) technology**. By combining these elements, the project aims to deliver a cutting-edge system that meets the evolving demands of the healthcare sector.

➤ 2-The proposed values

Reduced Downtime of Equipment :

Ensures continuous availability of critical medical devices.

Reduces patient delays due to malfunctioning equipment.

Automated Preventive Maintenance :

Scheduled servicing minimizes unexpected breakdowns.

Increases the lifespan of medical equipment.

Real-Time Monitoring &Reporting :

Digital tracking of maintenance logs and equipment performance.

Provides real-time alerts for equipment failures.

Cost Reduction & Financial Sustainability :

Lower Repair & Replacement Costs Early detection of issues prevents costly emergency repairs.

Extends the usable life of expensive medical equipment.

Optimized Inventory & Spare Parts Management Tracks stock levels, preventing unnecessary purchases

Improved Healthcare Service Quality :

.Better Patient Outcomes

Ensures that life-saving equipment (e.g., ventilators, MRI machines) is always operational.

Reduces risks of medical errors due to faulty equipment.

. Increased Staff Productivity

Technicians and biomedical engineers can manage their work more effectively.

Healthcare professionals can focus on patient care instead of handling equipment failures.

.Enhanced Trust & Reputation

Patients and healthcare providers gain confidence in the reliability of hospital infrastructure.

Strengthens Algeria's healthcare system with international standards of equipment maintenance.

Compliance & Regulatory Alignment :

.Meets Healthcare Safety Standards

Ensures hospitals comply with Algerian and international medical equipment regulations.

Facilitates inspections and certifications

.Traceability & Legal Protection

A transparent system ensures accountability. Reduces legal risks associated with medical equipment failures

Technological & Digital Transformation :

.Smart Maintenance with IoT & AI Integration

Sensors detect potential failures before they occur.

AI-powered diagnostics improve efficiency.

.Cloud-Based & Secure Data Management

Access data from anywhere while ensuring strong cybersecurity.

Facilitates collaboration between hospitals, suppliers, and technicians

.Scalability for Nationwide Implementation

Can be expanded to all hospitals across Algeria.

Future-ready for integration with AI-powered analytics & automation.

3-The teamwork of HM platform

Name	Specialty	Mission
Feitas Hala Ines	Managementofhealthcareservi ces HigherSchoolofManagement	Manager : • Planning organizing and Goal Setting • Decision Making • Continuous Improvement •Leadership & Team Management •Problem-Solving •Communication
Elarbi ouis Chaimaa	Managementofhealthcareservi ces HigherSchoolofManagement	Financial Manager : • Improvesfinancial planning • DecisionMaking • Analyzes Return on Investment • Enables precisebudgeting • Supports strategicdecision-making • Enhancesfinancialtransparency
Bengermik h Abdelkader	Computer Engineer and Digital Technologies	•Website Development •Development Website Maintenance and Updates •Solves technical issues and improves processes

Tableau 1: team work

Source:Establishedby us

3.1-Methods of interaction and communication between the teamwork

Effective communication is essential for successful teamwork as it fosters collaboration, enhances efficiency, and builds trust among team members. Clear and open communication helps prevent misunderstandings, ensuring that tasks are completed smoothly and on time. It also plays a crucial role in problem-solving by allowing teams to identify and address challenges quickly. Moreover, strong communication motivates team members, keeping them engaged and aligned with the project's vision. Encouraging the exchange of ideas promotes innovation and creative solutions. Additionally, it helps define roles and responsibilities, preventing confusion and overlapping tasks. In times of conflict, good communication facilitates resolution by promoting constructive discussions and maintaining a positive work environment. Ultimately, effective communication is the foundation of a productive and harmonious team

Regular Meetings: Scheduled team meetings to discuss progress, challenges, and updates.

Digital Collaboration Tools: Use of platforms like whatsapp ;zoom ;telegram

Email & Reports: Formal communication for documentation and progress tracking.

Instant Messaging: Quick exchanges for urgent matters and immediate collaboration.

➤ 4-The objectives of project

The terms	Objectives
The short term	<u>Centralize the Management of Equipment and Maintenance Operations:</u> This functionality aims to consolidate and organize all information related to medical equipment and maintenance activities on a single platform. It enables real-time tracking of equipment status, scheduling of preventive and corrective maintenance tasks, and assignment of tasks to relevant technicians. By centralizing this data, hospitals can enhance operational efficiency, reduce equipment downtime, and optimize resource management, while ensuring accurate and transparent tracking of maintenance activities. <u>Ensure Traceability of Maintenance Actions:</u> This functionality allows for the documentation and tracking of all maintenance interventions performed on medical equipment. Each action is recorded with details such as the date, responsible technician, parts used, and observations. This ensures complete transparency, facilitates audits, and helps identify recurring trends or issues for informed decision-making. <u>Reduce Downtime of Critical Equipment:</u> Through proactive planning of preventive maintenance, rapid detection of failures, and efficient interventions, this functionality minimizes service interruptions for essential equipment. Real-time alerts and predictive analytics help anticipate potential failures, ensuring maximum availability of critical equipment for patient care. <u>Improve the Efficiency of Technical and Biomedical Teams:</u> This functionality aims to optimize the workflow of teams responsible for maintaining medical equipment. By automating repetitive tasks, providing centralized management tools, and facilitating communication between teams, it saves time and reduces errors. Technicians can quickly access equipment histories, intervention guides, and necessary resources, speeding up repairs and enhancing productivity. <u>Ensure Compliance with Preventive and Corrective Maintenance Standards:</u> This functionality ensures that all maintenance interventions, whether preventive or corrective, are carried out in accordance with applicable standards and regulations. It includes automated reminders for preventive

	maintenance, standardized checklists for each type of equipment, and detailed records for every intervention. This helps maintain compliance, improve equipment safety, and extend its lifespan <u>Facilitate Communication Between Maintenance Stakeholders (Technicians, Suppliers, Hospitals):</u> This functionality aims to create a centralized and efficient communication channel among all parties involved in the maintenance of medical equipment. It enables technicians, suppliers, and hospital managers to collaborate in real time, share technical information, track the status of interventions, and resolve issues more quickly.
The medium term	<u>Performance Monitoring & Enhancements :</u> Continuously refine the platform based on hospital feedback and analytics. <u>Adding promotional advertisements to the platform:</u> Integrating promotional advertisements into the platform helps generate revenue while connecting users with relevant medical equipment suppliers and service providers. Strategic ad placement ensures a non-intrusive experience, adding value by offering targeted healthcare solutions and fostering industry partnerships.
The long term	<u>Management of Laboratory Equipment, Dialysis Centers, Radiology, and Medical Emergency Departments Securing Vital Equipment:</u> This functionality aims to ensure optimal management and security of critical equipment in laboratories, dialysis centers, radiology departments, and medical emergency units. It enables real-time monitoring of equipment status, scheduling of preventive maintenance, and rapid response to failures to minimize risks to patients. <u>Train Hospital Staff on the Proper Maintenance and Use of Medical Equipment:</u> This functionality aims to provide comprehensive and accessible training programs for hospital staff to optimize the use and maintenance of medical equipment. It helps reduce human errors, extend the lifespan of devices, and enhance patient safety. <u>AI-Driven Automation</u> – Implement fully automated maintenance scheduling and issue detection.

--	--

Tableau 2: objectives of the project

5-Timeline of project

5.1-Tasks description

This timeline will guide our project's progress and ensure that each task is executed efficiently and effectively. It begins with:

Idea Feasibility Evaluation: This step involves a thorough analysis of the project concept to determine its practicality and likelihood of success. Key factors to consider include market demand, resource availability, technical requirements, financial implications, and potential obstacles. The goal is to ensure the idea is both achievable and aligned with the project's objectives before moving forward.

Team Formation: This critical step involves building a team equipped with the skills, expertise, and experience required to successfully execute the project. It begins by identifying the key roles needed, such as project managers, technical specialists, designers, analysts, and other relevant positions, depending on the project's scope. Each team member's responsibilities are clearly defined to ensure accountability and efficient collaboration.

The process also includes assessing individual strengths, aligning them with project requirements, and fostering a cohesive team dynamic. Effective communication channels and leadership structures are established to streamline decision-making and problem-

solving. By assembling the right team and clarifying roles, the project is set up for smoother execution and higher chances of success

Market Research: This step involves a detailed examination of the target market to understand customer needs, preferences, and behaviors. It includes analyzing competitors to identify their strengths, weaknesses, and market positioning. Additionally, it tracks current market trends, such as emerging technologies. The goal is to gather actionable insights that inform strategic decisions, ensuring the project aligns with market demands and stands out from competitors. This research helps minimize risks and maximizes the project's potential for success

Business Model Canvas Evaluation: This step involves analyzing the business model canvas, a strategic tool that outlines key components of the business, such as value proposition, customer segments, revenue streams, cost structure, and key partnerships. The evaluation assesses the model's viability, profitability, and alignment with market demands. By identifying gaps, inefficiencies, or areas for improvement, necessary adjustments can be made to optimize the business model and ensure it supports the project's goals effectively. This process helps refine the strategy and enhances the likelihood of long-term success.

Business Plan Elaboration: This step involves creating a comprehensive roadmap for project implementation. It defines objectives, strategies, target market, and competitive advantage while outlining financial projections, resource allocation, and key milestones.

The plan ensures stakeholder alignment and provides a structured approach to project success.

Prototype Realization: This step involves creating a functional prototype or a working model of the product to test its design, features, and overall functionality. The prototype serves as a tangible representation of the concept, allowing the team to evaluate its performance, usability, and alignment with user needs. Through testing and feedback, any flaws, inefficiencies, or areas for improvement can be identified and addressed. This process ensures that the final product is refined, user-friendly, and meets the intended objectives before moving into full-scale production or implementation.

Application Development: This step focuses on designing a user-friendly software application that enhances the product by providing additional features and seamless functionality. It ensures intuitive navigation, improved user experience, and added value through tools like data analysis or customer support.

Prototype Testing: This step involves rigorously testing and evaluating the prototype to assess its performance, quality, and adherence to safety standards. Through systematic testing, any issues, defects, or areas for improvement are identified and addressed. This process ensures the prototype meets the desired specifications and user expectations, paving the way for a refined and reliable final product. The insights gained from testing help optimize functionality, enhance user experience, and ensure compliance with relevant regulations before moving forward.

Commercialization of a Hospital Maintenance Platform: This phase involves launching the platform in the healthcare market by implementing targeted marketing and sales strategies. It includes promoting the platform to hospitals, clinics, and healthcare facilities, highlighting its benefits such as streamlined maintenance processes, cost efficiency, and improved operational reliability. Distribution channels, such as partnerships with healthcare IT providers or direct sales teams, are established to reach the target audience. The goal is to drive adoption, ensure widespread use, and achieve long-term success in the healthcare industry.

Hospital Maintenance Platform Prototype Testing: This step involves rigorously testing the platform's prototype to evaluate its functionality, usability, and performance in real-world hospital environments. Key features, such as maintenance scheduling, issue tracking, and reporting tools, are tested to ensure they meet the needs of healthcare facilities. Feedback from hospital staff and IT teams is collected to identify any bugs, inefficiencies, or areas for improvement. The goal is to refine the platform, ensuring it is reliable, user-friendly, and fully compliant with healthcare standards before its official launch.

Second axe

Innovative

aspects

➤ 1-The nature of innovation

Innovation in maintenance services is not solely about introducing new technologies; rather, it can emerge from the optimization and integration of existing solutions to enhance efficiency and reliability. In healthcare institutions, where equipment availability is directly linked to patient care, maintenance innovation becomes a critical factor in ensuring operational continuity.

Our project represents a **technological and service-based innovation** that addresses the growing challenges of equipment maintenance in healthcare facilities. Inspired by Schumpeter's perspective on innovation as the introduction of an invention into the social environment, our platform redefines maintenance by transforming traditional practices into **a digital, intelligent, and interactive system**. By leveraging advanced technologies such as IoT, cloud computing, and AI-driven diagnostics, we introduce a **radical innovation** that enables proactive maintenance, real-time monitoring, and streamlined communication among stakeholders.

This innovation enhances the safety, efficiency, and longevity of medical equipment through a **comprehensive maintenance ecosystem** that includes:

- **A Secure Digital Network** within the Ministry of Health's intranet, ensuring seamless data exchange.
- **Real-Time Equipment Tracking & Inventory Management**, optimizing spare parts procurement and reducing downtime.

- **Knowledge Sharing & Experience Exchange**, fostering collaboration between maintenance experts and medical professionals.
- **Specialized Remote Training Modules**, equipping engineers with the latest maintenance techniques.
- **A Vigilance Platform for Equipment & Supplies**, enabling hospitals to report risks, malfunctions, and manufacturing defects.

By integrating these features, our platform revolutionizes maintenance practices, ensuring that hospitals can sustain high-quality healthcare services. This aligns with **Duchamp's view** that innovation is validated by its marketability—our solution directly addresses the operational gaps within healthcare institutions, making it a practical and economically viable innovation. Moreover, following **Akrich et al.'s** criterion of user validation, our platform ensures that hospitals, technicians, and healthcare professionals actively benefit from its functionalities.

Ultimately, by harnessing **technological and service-driven innovation**, our platform enhances equipment reliability, reduces costs, and strengthens the healthcare system's resilience. This transformative approach contributes to a safer, more efficient, and technologically advanced healthcare environment in Algeria.

➤ 2-The fields of innovation

Fields of Innovation in the Healthcare Maintenance Platform

By aligning our project with various areas of innovation, we can showcase the different ways in which it adds value to the healthcare maintenance sector:

- **New Processes:** The project aims to implement a **smart and innovative system for managing medical equipment maintenance**, enhancing operational efficiency and reducing unexpected failures. By leveraging **advanced technologies such as IoT; and data analytics**, it improves equipment tracking and predictive maintenance scheduling, ensuring **seamless hospital operations and continuous healthcare services**.
- **New Features:** The project includes the development of a **centralized unit** responsible for collecting maintenance data, along with an **automated alert system** that notifies relevant personnel when intervention is required. These features provide **enhanced control mechanisms**, ensuring **faster response times, improved equipment reliability, and better patient safety**.
- **New Customers:** By offering a **comprehensive solution for medical equipment maintenance**, the project targets new customer segments, including **public and private hospitals, medical centers, and clinics** that seek advanced digital solutions to optimize operations and ensure equipment sustainability. It also

serves **government agencies** aiming to enforce higher healthcare operational standards.

- **New Offers:** The project introduces an **innovative maintenance management system** that goes beyond traditional methods by integrating **automation, remote control capabilities, and real-time data analysis**. This provides a **cutting-edge solution** that enhances operational reliability while reducing unexpected maintenance costs.
- **New Models:** The proposed system establishes a **modernized model for preventive and corrective maintenance in healthcare institutions**. This model integrates **smart technology, advanced analytics, and remote accessibility**, transforming conventional maintenance approaches into a **proactive, data-driven system that minimizes operational risks**.

Through these innovations, our project enhances **healthcare service quality, minimizes equipment failures, and improves operational efficiency**, contributing to a **safer and more sustainable medical environment in Algeria**.

➤ 3-Innovative aspects

Integration of IoT Technology: The platform connects all medical equipment and maintenance tools within a **smart network**, enabling **real-time monitoring of device performance, predictive maintenance alerts, and automated reporting**. This ensures **efficient tracking and management of hospital equipment**.

Automation Potential: By incorporating **automated scheduling and smart diagnostics**, the system **reduces the need for manual intervention**, optimizing maintenance processes and **minimizing downtime for critical medical devices**.

Data Analytics: detect potential failures before they occur, and suggest proactive maintenance actions. This predictive approach **improves equipment reliability and extends its lifespan**.

User Interface & Accessibility: A dedicated **digital platform and mobile application** allow users to **remotely manage maintenance tasks, track equipment status, and access detailed reports**. This user-friendly interface **enhances efficiency and simplifies decision-making** for hospital staff and biomedical engineers.

Reduction of maintenance costs: The platform enables quick fault detection and efficient intervention management. This helps avoid major, often costly repairs and reduces unexpected expenses.

Centralization of economic data: The platform consolidates all information related to costs, repair frequency, and replaced parts. This facilitates budget tracking and strategic decision-making.

Optimization of human resources: By automating many tasks (ticket creation, monitoring, reporting), technical staff save time and can focus on high-priority interventions, increasing their overall efficiency.

Third axe

The market

Analysis

Strategic Market Analysis

Understanding the market you're entering is more than just crunching numbers—it's about getting a real sense of the landscape, the people in it, and the forces shaping it. Strategic market analysis helps organizations build a strong foundation by taking a close look at what's happening around them.

This means paying attention to:

- **Current market trends**
- **Consumer behavior**
- **Competitors**
- **Opportunities for growth**

By exploring these areas, an organization can better understand its own strengths and where it might need to improve. It also gives a clearer picture of what challenges or risks might lie ahead. With this knowledge, a company can make smarter, more confident decisions—crafting strategies that not only set it apart from the competition but also ensure long-term success and stability in the market.

➤ 1 Market Segmentation

● **Business Model Canvas (BMC) :**

The Business Model Canvas is a **strategic management tool** that helps businesses visualize and analyze their business models. It consists of 9 fundamental building blocks that describe the core aspects of a company's

At the heart of the BMC are **nine essential building blocks** that guide strategic thinking:

- **Customer Segments**
- **Value Propositions**
- **Channels**
- **Customer Relationships**
- **Revenue Streams**
- **Key Resources**
- **Key Activities**

- **Key Partnerships**
- **Cost Structure**

(Danby, 2023)

By mapping out each of these components, we can develop a well-rounded, strategic view of our business model and fine-tune it to better respond to our market and audience

1 Customer Segments

The different groups of customers the business targets with its products or services. This building block looks at your most important customers

.HM platform is designed to meet the needs of

- **Public and Private Hospitals**

We have chosen to target public and private hospitals as a key segment for our medical maintenance platform for several strategic reasons:

Critical maintenance needs: Hospitals rely heavily on the proper functioning of biomedical equipment to deliver quality care. Equipment failures or maintenance delays can have serious consequences. Our platform addresses these issues by ensuring rigorous equipment tracking, proactive maintenance planning, and reduced downtime.

Stable market potential: Hospitals represent a relatively stable institutional market, with allocated budgets for maintenance and continuous quality improvement. By targeting this segment, we can benefit from a steady and predictable revenue stream.

Regulatory compliance: Healthcare institutions are subject to strict regulations concerning equipment safety. Our platform supports compliance by providing full traceability, automated alerts, and comprehensive reporting.

- **Medical Clinics and Diagnostic Centers**

Medical clinics and diagnostic centers represent a particularly relevant segment for our platform for the following reasons:

High volume of sensitive equipment: These facilities use a wide range of diagnostic equipment (MRI, scanners, ultrasound machines...) that require strict monitoring and regular maintenance to ensure accurate medical results.

Limited internal resources: Unlike hospitals, clinics often have fewer technical or human resources to manage maintenance efficiently. Our platform offers a complete, accessible, and cost-effective solution tailored to their capacity.

Pressure to maintain service quality: To stay competitive, clinics must provide fast and high-quality services. Equipment failures or poor maintenance can damage their reputation. Our solution helps minimize these risks.

Growth in outpatient care: With the rise of ambulatory medicine and diagnostic centers, this segment is experiencing steady growth. Positioning ourselves early in this space will allow our platform to grow sustainably.

- **Manufacturers and Distributors of Medical Devices**

Targeting manufacturers and distributors of medical devices is a complementary and strategic choice for our platform, for several key reasons:

Industrial partnerships: These stakeholders aim to enhance the traceability and post-sales monitoring of their devices. By integrating our platform with their offerings, they can provide a complete service that includes maintenance management.

Improved customer service: Our solution allows them to remotely monitor the performance of devices installed at client sites (hospitals, clinics...), anticipate maintenance needs, and respond more quickly.

Support for regulatory compliance: Manufacturers face post-market surveillance obligations regarding device safety. Our platform helps them collect and centralize this data in a compliant and usable format.

Client retention and added value: By offering a connected maintenance solution, they increase the perceived value of their products and stand out in a competitive market.

2 Value Proposition

The unique value the business provides to its customers and how it differentiates itself from competitors. In other words, it's what sets your business apart, what makes it special, and what value HM platform it brings:

- ◆ **The first maintenance platform for hospitals.**
- ◆ **Increased equipment reliability and reduced downtime**
- ◆ **Real-time monitoring and automated preventive maintenance**
- ◆ **Cost reduction through optimized repairs**
- ◆ **Improved patient safety by ensuring proper functioning of medical equipment**
- ◆ **Compliance with health and safety regulations**
- ◆ **Scalable and customizable platform for national deployment**

3 Channels

- The **different channels** that the business uses to reach and interact with customers, including physical and digital channels

- **Digital platform**
- **Mobile application (long-term)**
- **Direct partnerships with hospitals**
- **Public procurement and government tenders**
- **Conferences, medical trade shows, and workshops**
- **Online training and knowledge-sharing forums**

4 Customer Relationships

The business' relationships with its customers and how it interacts with them. This is a fundamental building block as not only does it help you build and maintain a relationship, it also enables you to map out the cost and deliverable needed to continue to improve that relationship by:

Dedicated technical support and maintenance teams

Our platform offers round-the-clock access to specialized support teams, including biomedical engineers and IT professionals. These teams are trained to provide fast, effective assistance and to ensure the continuous availability and reliability of hospital equipment

Regular system updates and cybersecurity enhancements

We are committed to keeping the platform secure and up to date. Regular software updates include performance improvements, feature enhancements, and the latest cybersecurity protections to guard against data breaches and system vulnerabilities.

User training programs for hospital staff and technicians — free for the first time

To ensure a smooth onboarding experience, we offer comprehensive training sessions for healthcare professionals and maintenance staff. These sessions, provided free of charge for the first time, help users get the most out of the platform and reduce the learning curve.

Feedback mechanisms for continuous platform improvement

Our platform includes built-in tools for collecting user feedback through surveys, in-app suggestions, and support interactions. This feedback loop helps us prioritize updates and refine features based on real-world needs and user experience.

Free trial period for the first month

New users can explore the full capabilities of our platform with no commitment during a one-month free trial. This allows institutions to assess the platform's value before making a financial investment.

Scalable framework to support future expansion across institutions and regions

Designed with flexibility in mind, our platform can be deployed across multiple hospitals, clinics, and healthcare networks. Whether expanding within a city or across a country, the infrastructure supports rapid growth and integration with other systems.

5 Key Activities:

The key activities that the business must perform to deliver its value proposition and operate successfully. This building block helps you to define your most mission-critical actions and prioritize them accordingly.

Key activities define the essential processes that enable our HM Platform project to operate efficiently and deliver value to our users:

Development of a Digital Platform for Maintenance Monitoring

We are designing an advanced digital platform specifically tailored for tracking and managing the maintenance of medical equipment in healthcare facilities. This solution will centralize all maintenance activities, allowing hospitals and clinics to move from reactive maintenance to a more strategic, proactive approach. The platform will be accessible via web and mobile interfaces, ensuring flexibility and ease of use for all stakeholders.

Real-Time Data Collection, Monitoring, and Reporting

The platform will continuously collect data from connected devices and maintenance logs, enabling real-time monitoring of equipment status. Automated alerts, performance dashboards, and detailed reports will provide actionable insights, helping technical teams to address issues before they become critical and to comply with safety standards efficiently.

User Training and Technical Support

To ensure optimal adoption, we will provide comprehensive user training programs tailored for hospital technicians, biomedical engineers, and administrative staff. These sessions will cover platform functionality, data interpretation, and best practices. Additionally, we will offer ongoing technical support to resolve issues promptly and maintain high user satisfaction.

Collaboration with Hospitals

Strategic partnerships will be established with public and private hospitals to co-develop and refine the platform based on real-world use cases. These collaborations will allow for pilot implementations, user feedback, and system validation, ensuring the platform meets the daily operational needs of healthcare institutions.

Ensuring Compliance with Health Regulations and Standards

The platform will be built in accordance with national and international healthcare regulations, including medical device maintenance standards and cybersecurity protocols. This ensures that the platform supports hospitals in meeting their legal obligations and promotes patient safety.

Affiliation with the Ministry of Health and Data Confidentiality

To reinforce trust and credibility, the platform will seek official affiliation and endorsement from the Ministry of Health. This affiliation ensures alignment with national healthcare strategies and facilitates broader adoption. Data confidentiality will be a top priority: all patient and equipment-related data will be securely stored, encrypted, and protected according to GDPR principles and local data protection laws, with strict access control and audit trails to ensure transparency and accountability.

6 Key Resources

- The key resources the business requires to operate, including human resources, physical assets, and intellectual property. This can also include relationships, distribution channels, and virtual assets

Financial Resources

Internal Funding (Equity Capital):

The project will initially be financed through self-invested funds, reflecting the founders' commitment and reducing early dependency on external debt.

External Funding Sources:

To scale the platform and support its deployment, several external financing avenues will be pursued:

Business Angels: Early-stage investors who can provide not only capital but also valuable mentorship and networking opportunities.

ASF (Algerian Startup Fund): Potential grants or investments offered by national innovation support programs.

Bank Loans: Traditional credit options from commercial banks to finance hardware, operations, or expansion phases.

FNI (National Investment Fund): A public investment vehicle that supports strategic national projects in health and technology.

NASDA (National Agency for the Development of SMEs): Possible funding or support through programs targeting digital transformation in public services.

Material Resources

Computers and Workstations:

High-performance laptops and desktop computers for development, administration, and technical support teams.

Server Infrastructure:

A robust, secure server setup with high storage capacity to host the platform, ensure uptime, and manage healthcare data efficiently.

Office Equipment and Furniture:

Professional office setup including desks, chairs, printers, and meeting rooms to support daily operations and staff productivity.

Intangible Resources

Digital Platform and Mobile Application:

The core intellectual property of the project includes the custom-built digital platform and its mobile extension. These software assets will support equipment maintenance tracking, data analytics, user dashboards, and communication tools.

Brand Identity and Know-How:

The methodology, operational processes, and strategic positioning of the platform in the healthcare maintenance niche also represent valuable intangible assets.

Human Resources

Project Manager:

Responsible for overseeing the overall execution, stakeholder coordination, and strategic direction of the platform.

IT Specialist / Developer:

Handles software development, platform updates, bug fixes, and technical system integration with hospital infrastructure.

Secretary / Administrative Assistant:

Supports daily administrative operations, scheduling, correspondence, and internal organization.

Human Resources Director (HRD):

Manages recruitment, employee relations, and compliance with labor regulations.

Finance Director:

Oversees budgeting, financial planning, investor relations, and ensures transparency in resource allocation.

7 Key Partnerships

- The relationships and collaborations that the business has with its suppliers, vendors, and other external partners.

- ◆ **Ministry of Health**
- ◆ **Health Directorate**
- ◆ **Hospitals and healthcare institutions**
- ◆ **Suppliers and manufacturers of medical equipment**
- ◆ **Cybersecurity units**

8 Revenue Streams

The different sources of revenue that the business generates from its customers, including one-time sales, recurring revenue, and other revenue streams. This building block also helps determine how each stream contributes to the business profit.

Subscription Fees for Hospitals – 200,000 DZD per Institution

Each hospital will be charged an annual subscription fee of 200,000 Algerian Dinar (DZD) to access the platform's standard features, including real-time maintenance tracking, basic reporting, and user support. This model ensures a consistent and predictable revenue stream while providing essential services to healthcare institutions.

Customized Platform Deployment for Large Institutions (Estimated at 10,000,000 DZD for 50 Public Establishments in the First Year)

For major hospitals and large-scale healthcare networks, we offer tailored deployment services that include data migration, system integration, dedicated onboarding support, and advanced configuration. Based on projections, onboarding 50 public institutions in the first year could generate approximately 10 million DZD. This approach addresses the specific technical and operational needs of larger clients and reinforces long-term partnerships.

Government Contracts and Public Health Initiatives

Collaborating with the Ministry of Health and other government entities will open opportunities for public-sector contracts. These may include national digitalization programs, health infrastructure modernization efforts, or emergency readiness plans.

Securing such contracts not only increases revenue but also establishes credibility and fosters large-scale adoption.

Premium Subscription Services

In addition to the standard package, a premium tier will be offered. This subscription includes access to advanced analytics, AI-powered predictive maintenance, extended data retention, priority technical support, and compliance automation tools. Premium services will target high-demand institutions seeking to optimize performance and meet rigorous regulatory requirements.

9 Cost Structure :

The various costs that the business incurs to operate, including fixed costs, variable costs, and other expenses. It also helps you identify your most expensive assets and activities to make effective financial plans for the future.

1. Platform Development and Maintenance (Estimated: 1,200,000 DZD)

This includes the full-cycle cost of building, testing, and maintaining the digital platform:

UI/UX design, front-end and back-end development

Mobile application integration

Ongoing technical updates and debugging

Maintenance of performance, reliability, and compatibility across devices

2. Cloud Hosting and Data Security Measures

To ensure secure and scalable access, the platform will rely on a reliable cloud infrastructure:

Cloud server subscriptions with high availability and backup options

Data encryption and secure user authentication

Compliance with national and international data privacy regulations (e.g., GDPR-inspired principles)

Cybersecurity tools to prevent data breaches and system vulnerabilities

3. Marketing, Sponsorship, and Advertising

Strategic marketing is essential to reach hospitals, institutions, and decision-makers:

Sponsorship of medical conferences and healthcare expos

Online advertising (social media, medical directories, and targeted ads)

Production of promotional materials, brochures, and presentations

Public relations and branding efforts to raise credibility and visibility

4. Research and Development (R&D)

Continuous innovation is key to ensuring the platform evolves with market needs:

Adding features like predictive maintenance powered by AI

Improving analytics and dashboard functionalities

User feedback collection and usability testing

Development of modules for integration with hospital systems (ERP, asset tracking, etc.)

5. Legal and Regulatory Costs

These cover compliance with legal, regulatory, and administrative requirements:

Legal consultations for contracts, privacy policies, and terms of service

Registration, licensing, and potential patenting of intellectual property

Ensuring the platform meets all national health data and IT regulations

6. Personnel Costs

A skilled, multidisciplinary team is required to operate and scale the platform:

Salaries for technical, administrative, and managerial staff

Benefits and insurance

Training and skill development programs

Recruitment and onboarding expenses

PESTEL analysis for HM platform

After conducting an in-depth market study to understand the needs and expectations of healthcare institutions in terms of maintenance, we continue our strategic approach with a PESTEL analysis. This allows us to identify external factors – political, economic, sociocultural, technological, environmental, and legal – that may influence the development and implementation of our HM Platform. This analysis is a key tool for adapting our project to its broader environment and ensuring its long-term viability.

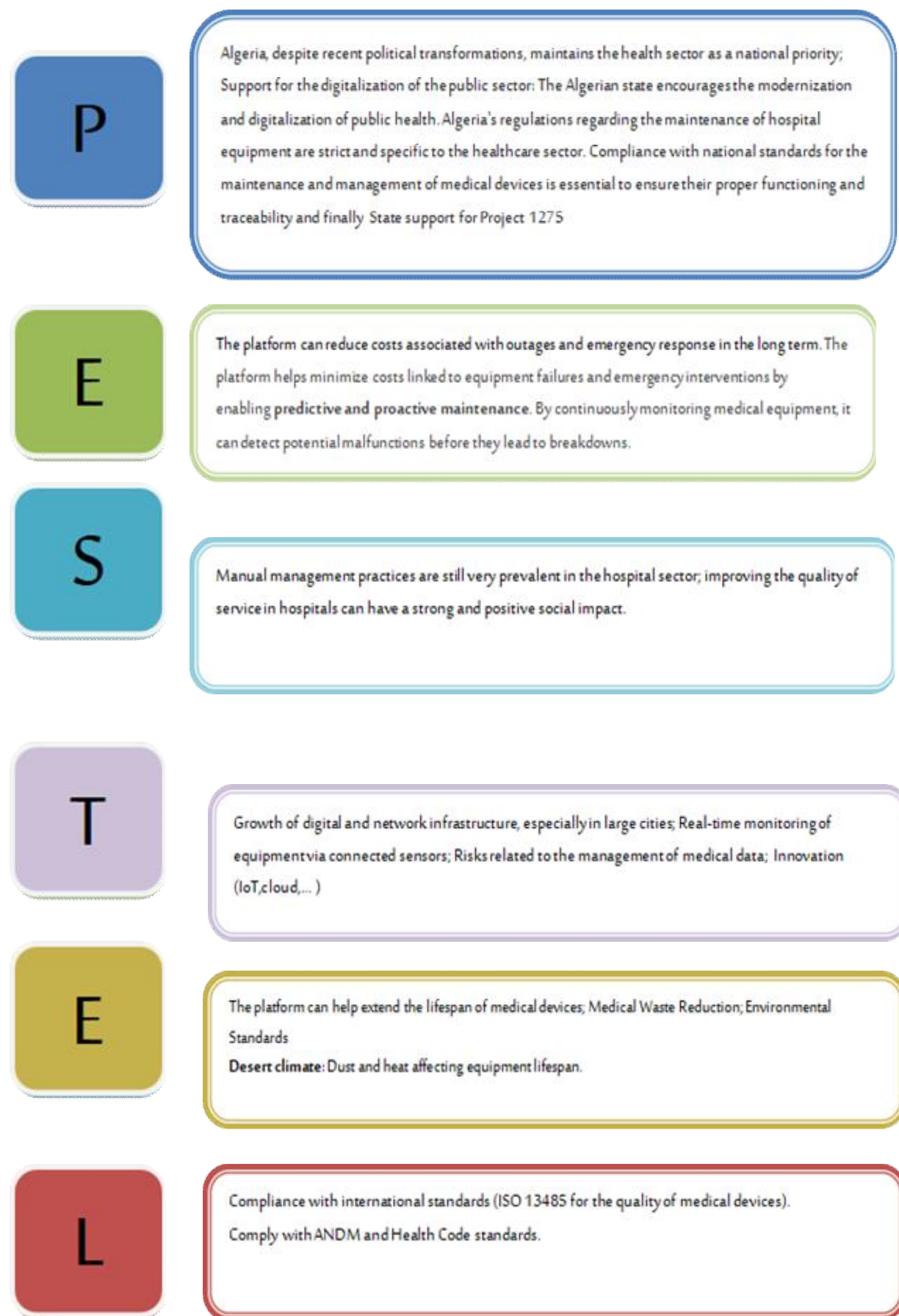


Figure 1: PESTEL analysis

➤ 2 Competitive analysis:

A competitor is a contender, a rival. They perform a task or position themselves in such a way as to try to achieve the same result as another who performs that same task or is in the same place.

For a company, a competitor is someone who manufactures or distributes products or services that meet the same needs. This could be an identical, similar, or different product or service.

Competitors within the same sector aim to meet the same consumer demand and to capture the same market share.

(concurrent, 2021)

Definition of Competition:

From an economic perspective, competition stimulates the economy and benefits consumers through lower prices, a wider selection, and increased quality and innovation. Companies, when faced with strong rivalry, must produce and sell products that consumers want, while offering them at prices they are willing to pay. Therefore, in a competitive market, it is the consumers who hold the power. In fact, competition helps keep prices low while maintaining the quality and variety of products and services.

(Concurrence, 2021)

There are several forms of competition and therefore competitive structures:

1. Direct competitor:

A direct competitor is a company that offers products or services similar to yours and targets the same market and customers. It therefore operates in the same market segment with a similar offering. (paul, 2025)

1) GMAO Soft (Algeria):

GMAO Soft is an Algerian company that specializes in **Computerized Maintenance Management System (CMMS)** software, designed for use across various industries—including **healthcare**, manufacturing, construction, and more. This versatility makes the company a flexible solution provider.

A CMMS primarily aims to assist company maintenance departments in their missions. A maintenance department seeks to maintain or restore an asset (equipment) to a specified condition so that it can perform a specific service.

A CMMS can also be useful in other departments of the company, such as production or operations (to provide information on the condition of equipment), as well as the company's financial or general management, by providing indicators to facilitate decision-making regarding fleet renewal. (DJIT GMAO)

2) MediMaint (France):

Our CMMS for healthcare allows you to be reactive and intervene quickly in the interests of the medical staff and the patient and guarantees optimal sanitary conditions seven days a week thanks to critical assets that are continuously functioning and maintained in operational condition.

The CMMS makes it possible to trace and track all the maintenance operations carried out on health establishments' assets, including small structures (EPHAD, care centers), and thus to avoid at all costs asset failures, including.

(DiMOmaint)

MediMaint is a French software solution dedicated specifically to **biomedical equipment maintenance** in healthcare settings. Unlike general-purpose CMMS tools, MediMaint is **tailored to hospitals, clinics, and medical facilities**, focusing on the unique maintenance needs of **medical devices and equipment**.

A major strength of MediMaint is its **compliance with ISO 13485**, an international standard for **quality management systems specific to medical devices**. This compliance ensures that the software meets high standards for traceability, documentation, and risk management, which is crucial in healthcare environments where safety and regulation are paramount.

3) Infor EAM Healthcare (International):

Infor EAM Healthcare is a global Enterprise Asset Management (EAM) solution, part of the Infor software suite. It is designed to manage large-scale assets in complex environments, and is widely used by major hospitals and healthcare networks around the world.

This platform stands out due to its advanced features:

Predictive maintenance

Asset lifecycle tracking

- Regulatory compliance tools
- Integration with other enterprise systems (such as ERP and HR)

Infor EAM Healthcare is highly scalable, making it ideal for large or multi-site healthcare organizations. It supports high-performance operations and helps healthcare providers meet international best practices in maintenance, risk management, and cost control.

Its reputation as a mature and powerful solution makes it a go-to choice for institutions seeking technological depth, integration capabilities, and global support

2 Indirect competitors:

Indirect competitors are companies that do not offer exactly the same product or service, but they meet the same need. Their alternative solutions can therefore attract part of your customer base, even if they do not compete with you directly. (paul, 2025)

1) SAP EAM (Enterprise Asset Management):

Definition of SAP EAM:

Enterprise asset management (EAM) incorporates the management and maintenance of physical assets owned by a company throughout the entire lifecycle of an asset, from capital planning, procurement, installation, performance, maintenance, compliance, risk management, through to asset disposal.

EAM software helps organizations to plan, optimize, execute, and track the necessary activities, priorities, skills, materials, tools, and information associated with an asset. Failure to manage and maintain enterprise assets can lead to unplanned downtime, suboptimal asset performance, and supply shortages. Some organizations also rely on EAM systems to demonstrate compliance with regulatory bodies to preclude liability if a failure occurs. (SAP, 2025)

- SAP EAM is a highly comprehensive and robust asset management solution used by large organizations worldwide. It offers a wide range of advanced features, such as predictive maintenance, integration with financial and HR systems, and powerful analytics. However, its **high cost, complex implementation, and limited localization** for specific regional needs—particularly in markets like North Africa—make it **less accessible or practical** for small to medium-sized healthcare institutions in these areas. As such, it represents an indirect competitor: technologically advanced, but often too large-scale or generalized for local hospitals.

2) Local Manual Maintenance Companies (Non-Digitalized):

In Algeria, Local Manual Maintenance Companies are small or medium-sized service providers that rely on traditional, manual methods for equipment maintenance. These businesses offer basic services such as plumbing, electrical work, HVAC repairs, and mechanical work, typically without the support of digital platforms like Computerized Maintenance Management Systems (CMMS). Communication is done through phone calls, paper records, and on-site visits.

Although these companies are often cost-effective and well-known in their local communities, they lack the efficiency, traceability, and scalability offered by digital solutions. They remain indirect competitors to more digitalized businesses because they fulfill the same maintenance needs, albeit through simpler and less innovative methods. These companies dominate sectors like hospitals, clinics, and public institutions.

While they offer affordable services, their non-digital workflows limit their ability to scale and compete with businesses that leverage modern technology.

Here's a more detailed explanation of how these businesses typically function in Algeria:

1. Nature of Services

Local manual maintenance companies in Algeria typically focus on the following services:

- **Plumbing:** Repairing leaks, installing new pipes, and general water system maintenance.
- **Electrical:** Fixing electrical issues, wiring, and installations.
- **Mechanical:** Repairing household appliances, vehicles, and other machinery.
- **General Maintenance:** Offering repairs and upkeep for homes, offices, and businesses, such as fixing doors, windows, and other infrastructure.

These businesses cater to a variety of customers, including individuals, local shops, and small businesses that need affordable, on-demand maintenance services.

summary about competitors:

Direct competitor:

Name	Description	Strengths	Limitations
GMAO Soft (Algeria)	Local CMMS provider for multiple industries, including healthcare.	Localized expertise, customization, proximity to clients.	Limited international reach, fewer advanced features than global players.
MediMaint (France)	Biomedical maintenance software compliant with ISO 13485.	Focused on medical devices, regulatory compliance, adapted to hospital environments.	Limited to healthcare, not suitable for broader asset management needs.
Infor EAM	Global EAM platform	Advanced features,	High complexity,

THIRD AXE MARKET ANALYSIS

Healthcare	tailored for hospitals.	high scalability, strong integration, global support.	potentially high cost, requires technical expertise to deploy.
-------------------	-------------------------	---	--

Tableau 3: direct copetitors

Indirect competitors:

	Description	Strengths	Limitations
SAP EAM	Global enterprise-level asset management solution.	Extremely comprehensive, integrates with SAP ecosystem, trusted worldwide.	Expensive, not tailored to regional/local healthcare needs, complex to deploy.
Local Manual Maintenance Firms	Non-digital providers offering traditional maintenance services.	Low-cost, locally known, simple service model.	No digital traceability, lacks automation, limited scalability.

Tableau 4: indirect competitors

Interpretation

This analysis highlights the main direct and indirect competitors in the asset management software landscape, especially within the healthcare sector. Regional providers like GMAO Soft offer strong localized value, while international solutions such as Infor EAM and SAP provide advanced functionality for larger institutions. Understanding these dynamics is crucial for positioning new solutions effectively in the market.

SWOT Analysis for HMPlatform:

	Strengths	Weaknesses
Internal	- Obtaining an Innovative Project Label - Improved Efficiency - Cost Savings; Lowers operational costs by optimizing resource allocation and preventing costly	- Lack of digital skills among some hospital staff, necessitating a comprehensive training phase. - Insufficient digital infrastructure in certain healthcare facilities, especially in rural areas, which may limit platform accessibility.

THIRD AXE MARKET ANALYSIS

	- breakdowns - Integration Capabilities; Can connect with Hospital Information Systems (HIS), CMMS, and IoT-enabled devices. - Compliance & Safety - Improved Efficiency - The courses offered at the school help us develop strong skills in various areas - expert executives in the health field.	- Resistance to change, particularly in hospitals where traditional practices are deeply ingrained.
External	Opportunities - Growing Healthcare Digitization ; Increasing demand for smart hospital solution and State support for digitization: The Algerian government supports digital transformation projects in the health sector. - Partnerships with Medical Device Manufacturers ; Collaboration for real-time equipment monitoring. - Take advantage of a free incubator.	Threats - Cybersecurity Risks ; Sensitive hospital data could be targeted by hackers - Competition: New competitors (new entries) may offer similar offerings. - Economic Constraints ;Hospitals in developing countries may lack budget for digital transformation. - difficulty in obtaining information

Tableau 5: SWOT analysis

Interpretation :

STRENGTHS :

The **medical equipment maintenance platform project** benefits from a set of strategic strengths that significantly enhance its relevance and feasibility. Obtaining an **Innovative Project Label** serves as a powerful credibility lever with public and private institutions, facilitating access to funding and support programs. The improvement of **operational efficiency**, achieved through the automation of maintenance processes, not only reduces intervention times but also ensures better coordination between technical and medical teams.

From an economic standpoint, the project enables **substantial cost savings** by preventing critical equipment failures and optimizing the use of human and material resources. Its **integration capabilities** with existing hospital systems—such as Hospital Information Systems (HIS), Computerized Maintenance Management Systems (CMMS), and IoT-enabled devices—ensure smooth adoption and technological continuity. In terms of **compliance and safety**, the platform ensures rigorous traceability of operations and contributes to compliance with health and regulatory standards, thereby enhancing the safety of both patients and staff.

Moreover, the team's continuous training, provided through specialized programs, ensures a steady **skills development** essential to the technical success of the project. Lastly, the involvement of **healthcare field experts** brings valuable on-the-ground experience, allowing for a deep understanding of the actual needs of hospitals and better alignment of the proposed solutions.

WEAKNESSES :

The project may face several **internal weaknesses** that could hinder its optimal implementation. First and foremost, the **lack of digital skills** among part of the hospital staff represents a major obstacle, making a comprehensive training phase necessary. In addition, **insufficient digital infrastructure** in certain healthcare facilities—particularly in rural areas—may limit the platform's accessibility. **Resistance to change** is also a significant factor, especially in hospitals where traditional practices are deeply rooted. Finally, the **initial costs** related to development, deployment, and training can be high, particularly in the absence of immediate external financial support.

OPPORTUNITIES :

The external environment presents real opportunities to seize in order to ensure the project's success. **Algeria has expressed a clear political will** to digitize the healthcare sector, which opens the door to **institutional partnerships and public support**. In addition, **national and international funding programs** are available to promote

technological innovation in the medical field. The project can also be **scaled up nationally** or adapted to other types of public institutions. The integration of advanced technologies such as the **Internet of Things (IoT)** could further enhance the platform's features, providing **significant added value** to hospitals.

THREATS :

The project faces several external threats that could hinder its success. Cybersecurity risks are a major concern, as sensitive hospital data may be vulnerable to cyberattacks. Additionally, competition from new market entrants offering similar digital solutions could challenge the project's relevance. Economic constraints are also significant, particularly in developing countries where hospitals may struggle to allocate budgets for digital transformation. Lastly, difficulty in obtaining reliable information could delay decision-making and limit effective planning.

2 market study:

(questionnaire)

After conducting a questionnaire and obtaining a sample of officials, judges, and qualified personnel from 50 hospitals across the national territory (Algiers; Oran; Djelfa; Mascara; Bechar; Annaba; Setif; Constantine; Bechar; Taghit; Laghwat; Al Bayadh), including in-person interviews {EHU Oran, CHU Oran, EHS Mother and Child Tlemcen, EPH Sig Mascara ...}, we identified the following problems and their need for a maintenance platform as well as their willingness to use it.

The main objective of the HMPlatform questionnaire is to gather essential information from healthcare institutions in order to understand their maintenance needs, whether preventive or corrective. This questionnaire helps identify current maintenance management practices, as well as the level of digitalization in place. It also aims to determine user expectations and priority features such as planning, intervention

tracking, and cost monitoring, along with their preferences regarding the user interface. The collected data will be used to tailor the HMPlatform to real field conditions, enhance its modules according to actual usage, and ensure effective implementation of the platform with dedicated support for each institution

Here are the results obtained from their answers:

(The questionnaire was prepared in Arabic to ensure it is understood by the hospital staff.)

1/Does your institution face challenges in maintaining medical equipment?

The objective of this question in the context of the HMPlatform questionnaire is to identify the existence of specific difficulties or constraints related to the maintenance of medical equipment within the institution.

هل تواجه مؤسستكم تحديات في صيانة الأجهزة الطبية؟
52 réponses

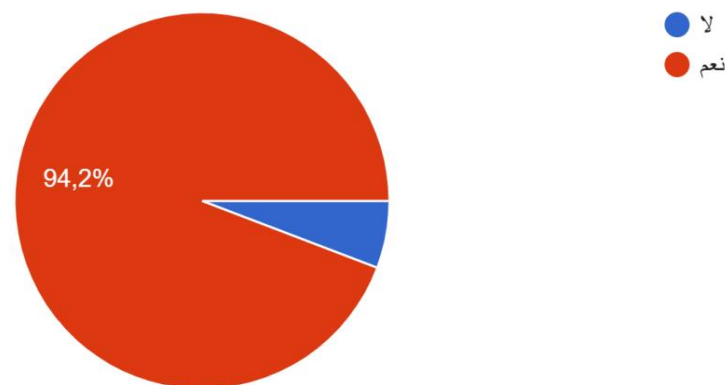


Figure 2: there are challenges in maintaining medical equipment

Results:

- **Total responses:** 52
- **Yes:** 94.2% (approximately 49 institutions)
- **No:** 5.8% (approximately 3 institutions)

Analysis:

1. A **very high percentage (94.2%)** of institutions reported facing challenges in medical equipment maintenance, indicating a **widespread and persistent issue** in the healthcare sector.
2. This suggests potential **gaps in resources or the absence of an effective maintenance management system**, including tracking, scheduling, or rapid response to equipment failures.
3. Only **5.8% of institutions** reported no challenges, which may indicate they have a robust internal system or lower equipment load and operational pressure.

This overwhelming percentage strongly supports the need for a **digital solution like HMPlatform**, which can offer **centralized management, early alerts, detailed reporting, and enhanced maintenance workflows** in healthcare institutions.

2/What types of difficulties do you face in maintaining medical equipment? (Multiple choices allowed)

The objective of this question is to **identify the specific challenges** that healthcare institutions encounter during the maintenance of medical equipment

ما نوع الصعوبات التي تواجهكم في صيانة الأجهزة الطبية؟ (يمكن اختيار أكثر من خيار)
52 réponses

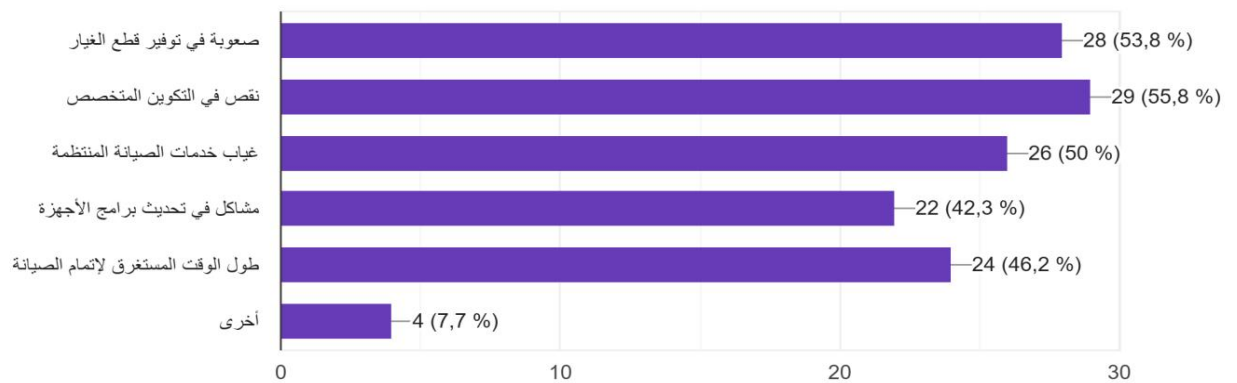


Figure 3: types of difficulties in maintaining medical equipment

Other:

Lack of preventive maintenance

No dedicated maintenance workshop; maintenance is performed in front of patients and in the emergency room, with a shortage of skilled personnel in this field.

Lack of training related to maintenance

No digital maintenance platform available in the institution

Total respondents: 52 institutions

(Multiple responses allowed)

Type of Difficulty	Number of Responses	Percentage (%)
Lack of specialized training	29	55.8%
Difficulty in sourcing spare parts	28	53.8%
Absence of regular maintenance services	26	50%
Long time required to complete maintenance	24	46.2%

Issues with updating equipment software	22	42.3%
Other	4	7.7%

Analysis:

1. The **most reported challenge** was the **"lack of specialized training"** (55.8%), highlighting a clear need to **train technical staff** in medical equipment maintenance.
2. **"Difficulty in sourcing spare parts"** (53.8%) ranks second, pointing to **supply chain issues or weak inventory planning**.
3. **"Absence of regular maintenance services"** (50%) shows that many institutions lack **structured preventive maintenance programs**.
4. **"Long time required to complete maintenance"** (46.2%) reflects **delays in response or inefficient task distribution**.
5. **"Issues with updating equipment software"** (42.3%) indicates **technical difficulties in managing modern devices**.

The results reveal **multi-faceted challenges**, mostly related to **human factors (training)** and **technical/logistical aspects (spare parts and software updates)**. These insights reinforce the need for a comprehensive solution like **HMPlatform**, which can:

- Schedule and track preventive maintenance
- Manage spare parts availability
- Log tasks and completion times

3/How long does it usually take to repair faults or maintain medical equipment?

this question helps highlight how quickly maintenance issues are resolved and whether that timeframe is acceptable in a medical context.

كم من الوقت يستغرق عادةً إصلاح الأعطال أو صيانة الأجهزة الطبية؟
52 réponses

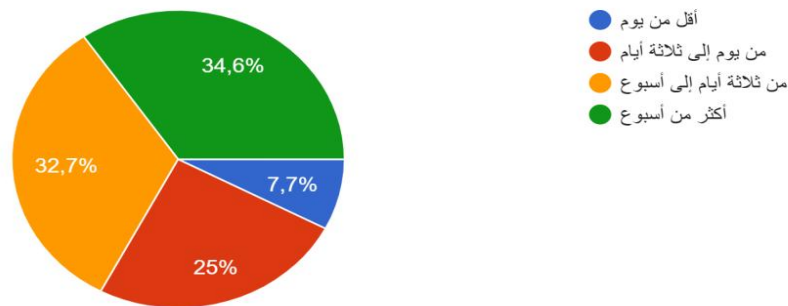


Figure 4: time to repair faults or maintain medical equipment

Response Breakdown:

Repair/Maintenance Time	Percentage	Approximate Number of Responses
Less than 1 day	7.7%	~4 responses
1 to 3 days	25%	~13 responses
3 days to 1 week	32.7%	~17 responses
More than 1 week	34.6%	~18 responses

Analysis:

1. Long repair times (more than 3 days):

- A **significant majority (67.3%)** of respondents indicated that repairs typically take **more than 3 days**.
- Of those, **34.6% reported delays of more than a week**, which can be **critical in a healthcare setting** where equipment availability is vital.

2. Short repair times (3 days or less):

- Only **32.7%** of respondents experience maintenance within 3 days.

- Just **7.7%** of issues are resolved in **less than a day**, showing **limited rapid response capacity**.

These results highlight a **major issue in the efficiency of medical equipment maintenance**:

- **Over two-thirds** of interventions take longer than 3 days, posing a **risk to service continuity and patient care**.
- There is a clear **need for a digital maintenance management solution**—such as **HMPLATFORM**—to:
 - Improve **response time**,
 - Ensure **traceability** of repairs,
 - Enhance **technician scheduling and resource allocation**.

4/"Does the current malfunction reporting process in your institution take a long time?"

This is a clear and neutral question aimed at assessing the efficiency of the reporting workflow for equipment failures in a healthcare or institutional setting.

هل طريقة الإبلاغ عن الأعطاب الحالية في مؤسساتكم تأخذ وقتًا طويلاً؟

52 réponses

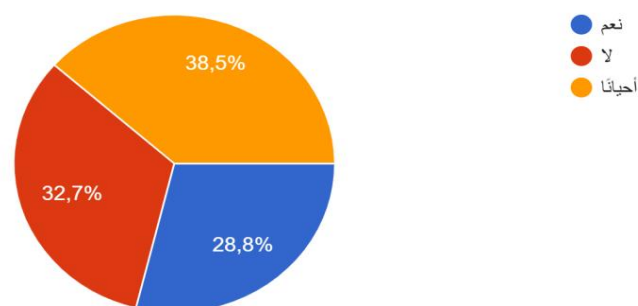


Figure 5: the current malfunction reporting process take a long time

"Yes" (نعم) – 36.5%

Over a third of respondents believe the reporting process is time-consuming, indicating a significant concern about efficiency.

"No" (لا) – 32.7%

Nearly a third do not find the process lengthy, suggesting that it works well for a notable portion of employees.

"Sometimes" (أحياناً) – 28.8%

A little over a quarter have mixed feelings, implying that delays may depend on specific cases or circumstances.

5/"Is there an existing platform for maintenance and fault reporting currently used in your institution?"

The goal is to determine whether the institution has a **digital or structured system in place** for managing **maintenance tasks and reporting equipment failures**. This helps assess the current level of technological integration and identify potential gaps or opportunities for improvement.

هل توجد منصة حالية للصيانة والتبليغ عن الأعطاب تستخدمونها في مؤسستكم؟
52 réponses

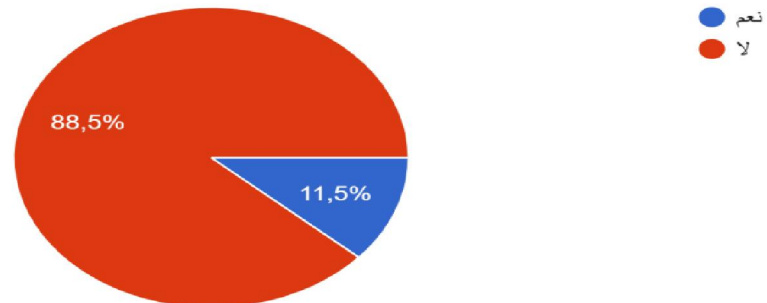


Figure 7: an existing platform for maintenance and fault reporting currently used

No (لا) – 88.5% (46 respondents)

Yes (نعم) – 11.5% (6 respondents)

إذا كانت الإجابة "نعم"، يرجى تحديد اسم المنصة ووصف طريقة عملها
6 réponses

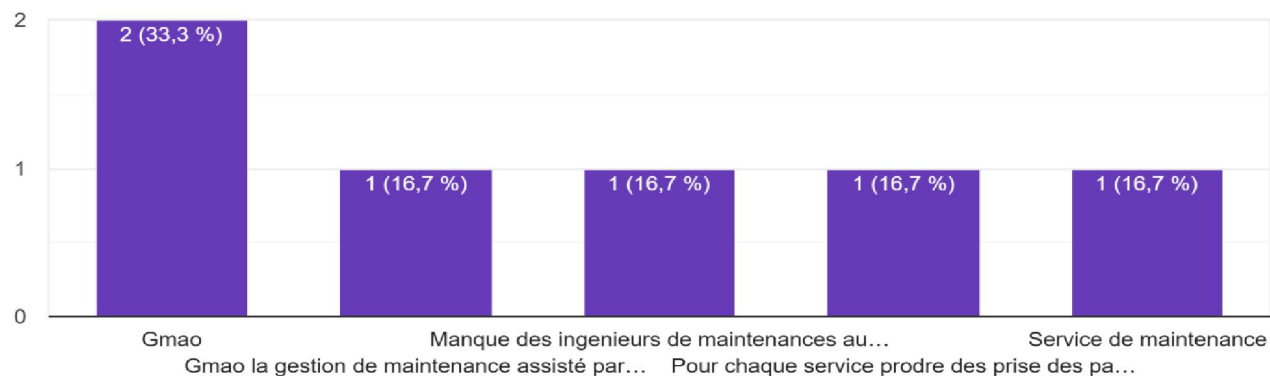


Figure 6: other responses

Analysis

Significant Lack of Digital Systems:

The overwhelming majority (88.5%) of institutions do **not** use any digital platform for maintenance

This reveals a **major gap** in the adoption of digital solutions in this domain.

Strong Opportunity for Development:

The high percentage of institutions without platforms indicates a **clear need** for an efficient digital solution.

This presents a **strategic opportunity** to introduce and promote a specialized platform for maintenance management, especially in medical or institutional settings.

Reliance on Manual Processes:

Institutions are likely relying on **traditional or manual methods** (paper, phone calls, verbal communication), which can lead to **delays, inefficiencies, and lack of proper documentation or analytics**

Conclusion:

There is a **clear consensus on the absence of digital tools** for maintenance reporting in the surveyed institutions. This emphasizes the importance and potential value of developing a user-friendly, efficient, and responsive digital maintenance platform.

6/"Do you think that having a digital maintenance platform could help address these challenges?"The question aims to **gather opinions** on the **perceived usefulness** of a digital maintenance platform. It helps evaluate whether stakeholders believe such a tool could **improve efficiency, reduce delays, and resolve existing maintenance issues** within the institution

هل تعتقدون أن وجود منصة إلكترونية للصيانة يمكن أن يساعد في حل هذه التحديات؟
52 réponses

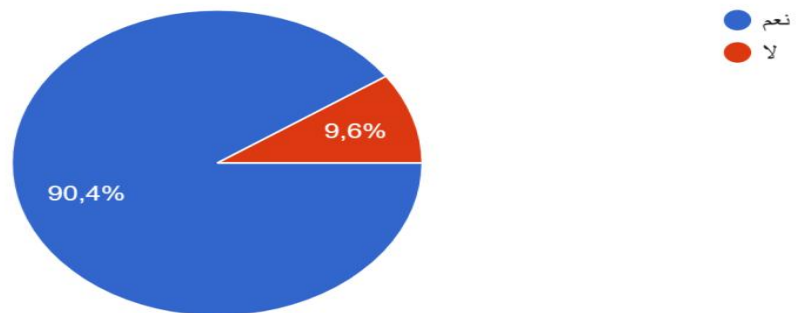


Figure 8: a digital maintenance platform could help address these challenges

Results:

Yes: 90.4% (approximately 47 respondents)

No: 9.6% (approximately 5 respondents)

Analysis:

Strong Interest in Digital Solutions:

An overwhelming **90.4% of respondents** believe that a digital maintenance platform could be beneficial.

This demonstrates **high awareness** of the potential value that technology can bring to maintenance management.

Positive Readiness for Adoption:

The results indicate a **strong willingness to adopt digital tools**, particularly if they help resolve existing issues like delays, lack of organization, or poor tracking.

Minor Resistance or Skepticism:

Only 9.6% expressed doubt, which could be due to factors such as lack of familiarity with such platforms, fear of change, or perceived complexity.

Conclusion:

There is a **clear and strong endorsement** for implementing an electronic maintenance platform, reflecting both **need and openness to change**. These findings support the development and introduction of a user-centered, efficient solution that addresses real operational pain points in maintenance workflows.

7/What features do you consider essential in a medical equipment maintenance platform?
(Multiple choices allowed)

The purpose is to **identify user priorities and expectations** regarding key functionalities in a maintenance platform for medical equipment. This helps guide **design and development decisions** based on actual needs, such as **reporting tools, tracking, notifications, data analytics, or technician scheduling**.

ما المزايا التي ترون أنها ضرورية في منصة صيانة الأجهزة الطبية؟ (يمكن اختيار أكثر من خيار)
52 réponses

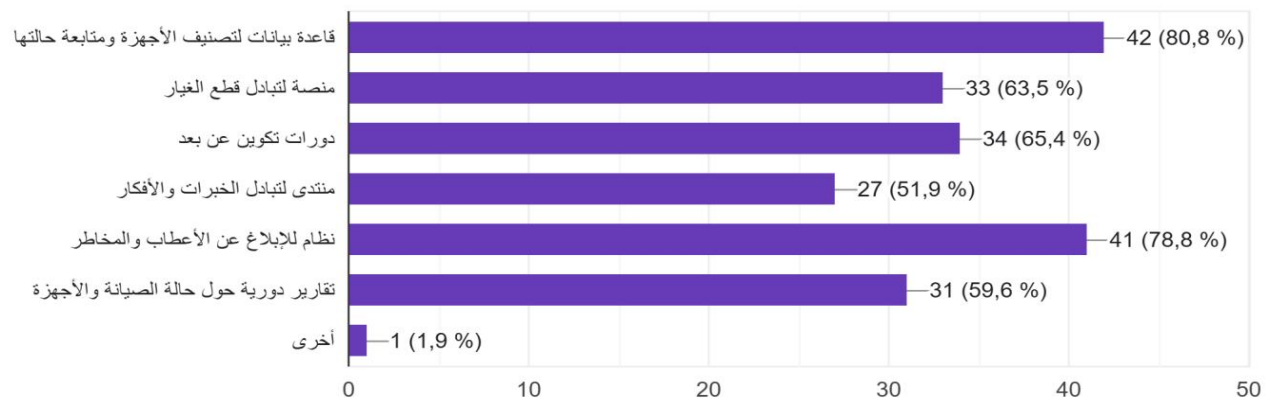


Figure 9: features consider essential in a medical equipment maintenance platform

Results Table:

Feature	Number of Votes	Percentage
Equipment database for classification and status tracking	42	80.8%
Notification system for breakdowns, maintenance, and interventions	41	78.8%
Platform to submit breakdown requests	33	63.5%
Remote training modules	27	51.9%
Periodic reports on maintenance and equipment status	31	59.6%
Forum for knowledge sharing and innovation	34	65.4%
Other	1	1.9%

Analysis:

The **most requested features** are:

An **equipment database** and a **notification system**, both scoring over 78%, indicating strong interest in structured tracking and timely alerts.

Submission of repair requests and **reporting tools** were also rated highly, showing a desire for streamlined communication and data-driven decision-making.

A significant portion supports **remote training** and **collaborative forums**, highlighting the importance of staff development and peer learning.

Conclusion :

The results clearly show that users are seeking a **comprehensive and integrated platform** that includes the following functionalities:

Smart management of equipment data

Notification system and scheduled preventive maintenance

Streamlined reporting and repair process

Support for training and professional development

Communication tools and knowledge sharing

Accurate reporting for performance monitoring

These insights serve as a strong reference for defining key functional priorities when designing a digital maintenance platform for medical equipment.

8/"**Would you be willing to use a digital maintenance platform if it were available?**

This question aims to **assess the willingness and openness** of users or institutions to **adopt a digital solution** for maintenance management. It helps gauge **acceptance**, potential **user engagement**, and the **feasibility of implementation**

هل أنتم على استعداد لاستخدام منصة إلكترونية للصيانة إذا كانت متوفرة؟
51 réponses

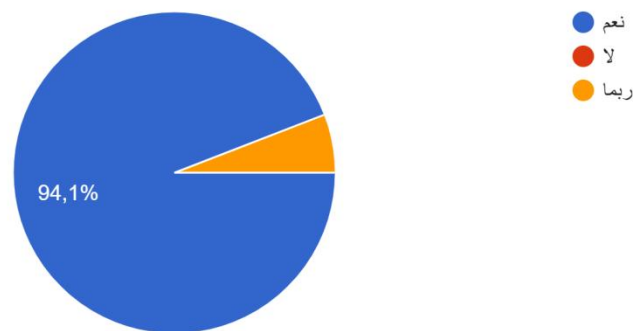


Figure 10: ability to use a digital maintenance platform if it were available

Additional Notes or Suggestions:

"If the platform is well-organized, easy to use, has a responsive interface, allows for smooth and automatic uploading and downloading of data, includes a solid and secure database, and facilitates communication with all departments and services."

Results:

Yes: 94.1%

This very high percentage reflects widespread acceptance of the idea of using an electronic platform, indicating a strong need or desire to adopt digital solutions to facilitate services.

Maybe: 5.9% combined

This small percentage suggests that the vast majority of respondents have no major reservations about the idea, with a minority that may need further persuasion or clarification of benefits.

Conclusion:

The results demonstrate overwhelming support for the electronic platform, making it a feasible and welcomed step by users

9/Should the platform send automatic alerts when the spare parts inventory reaches a critical level?

To ensure timely replenishment of spare parts by implementing automated notifications

when inventory levels become critically low, thus preventing maintenance delays and equipment downtime

هل يجب على المنصة إرسال تنبيهات تلقائية عند وصول مخزون قطع الغيار إلى مستوى حرج
50 réponses



Figure 11: the platform send automatic alerts when the spare parts inventory reaches a critical level

Results:

Yes, via email only: 68%

The majority prefer email notifications, suggesting it is seen as a professional and reliable method for critical alerts.

Yes, via SMS and instant notifications: 22%

A smaller but significant portion prefers real-time alerts, indicating a need for immediate awareness in urgent situations.

No, inventory management will be monitored manually: 8%

A very small minority opposes automated notifications, possibly due to concerns about notification overload or trust in manual tracking.

Conclusion:

Strong preference for automated alerts: Most respondents (90% combined) want the platform to notify them when inventory is critically low, with a clear majority favoring email.

Actionable insights:

Implement **email notifications** as the primary method for critical alerts.

Offer **optional SMS/instant notifications** for users who need real-time updates

The minimal opposition (8%) suggests that automated alerts are widely accepted, but manual tracking should remain an option for a small subset of users.

10/"What channels should be used to send maintenance alerts?"

The goal is to identify the **preferred communication methods** for sending maintenance notifications (e.g., SMS, email, in-app notifications). This helps ensure that alerts are **delivered effectively and promptly**, improving **response times** and **user engagement**.

ما هي الوسائل التي يجب استخدامها لإرسال تنبيهات الصيانة؟
49 réponses

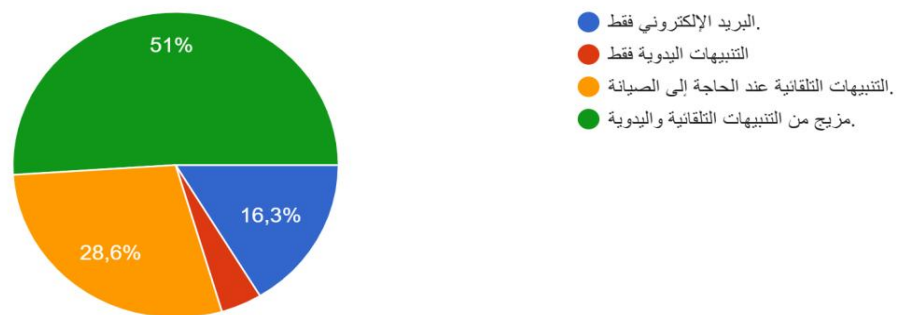


Figure 12: kind of channels should be used to send maintenance alerts

Results Summary

Alert Method	Percentage	Key Insight
Email Only	51%	The clear majority preference for formal, documented communication
In-Platform Notifications Only	26.6%	Significant preference for integrated system alerts
Hybrid (Email + In-Platform)	16.3%	Balanced approach preferred by a smaller but notable group
Conditional Alerts	~6.1%	Niche use case for specific scenarios

11/"How should roles and permissions be structured in the platform?"

The aim is to understand user expectations regarding the **distribution of responsibilities and access levels** within the platform. This helps in designing a system that ensures **security, clarity, and operational efficiency**, by assigning appropriate **roles (e.g., admin, technician, supervisor)** and **permissions** based on tasks and authority.

كيف يجب تكوين الأدوار والصلاحيات في المنصة
49 réponses



Figure 13: roles and permissions can be structured in the platform

Response Breakdown:

“Permissions should be defined according to roles”

49% of respondents (≈ 24 people)

Interpretation:

The majority prefer a clear structure where permissions are defined based on predefined roles. This implies the use of a **Role-Based Access Control (RBAC)** system.

“Administrators and managers should have full control over the platform”

40.8% of respondents (≈ 20 people)

Interpretation:

A significant portion supports giving full control exclusively to administrators and managers. This reflects a preference for a **centralized, hierarchical control model**.

“Supervisors should only have access to assigned tasks”

Small proportion ($\approx 2-3$ people)

Interpretation:

This view emphasizes **strictly limited access**, confined to each person's assigned tasks.

“Supervisors should have full access, including user management”

Very small proportion ($\approx 1-2$ people)

Interpretation:

Very few support granting supervisors broad or administrative-level permissions.

Conclusion:

Majority (49%) favor **role-based access** structuring — in line with good digital governance practices.

Significant minority (40.8%) prefer **centralized authority** for administrators.

Expanded access for supervisors is widely rejected.

Recommendation:

Implement a **Role-Based Access Control (RBAC)** system with:

Clearly defined hierarchical roles:

Administrators > Managers > Supervisors > Users

Well-defined permission boundaries based on role levels.

A **dynamic access control panel** to manage and adjust permissions easily.

12/Should the platform include schedules for periodic maintenance of equipment?

The purpose of this question is to determine whether users consider **automated scheduling for preventive maintenance** an essential feature. It helps assess the importance of **proactive equipment management**, which can **reduce breakdowns**, **extend equipment lifespan**, and **ensure compliance** with maintenance standards.

هل يجب على المنصة تضمين جداول زمنية للصيانة الدورية للأجهزة؟

50 réponses

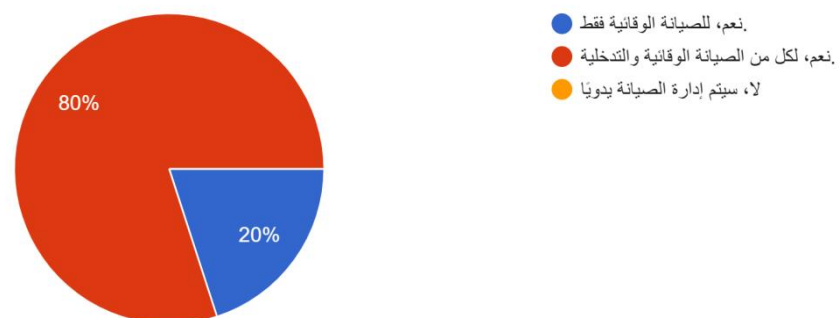


Figure 14: the platform include schedules for periodic maintenance of equipment

Response Breakdown:

"Yes, for both preventive and corrective maintenance"

80% of respondents (40 people)

Interpretation:

A strong majority believe the platform should include **full maintenance planning**, covering **both preventive and corrective** tasks. This indicates a clear need for **integrated scheduling** to ensure proper equipment operation and reduce downtime.

"Yes, for preventive maintenance only"

20% of respondents (10 people)

Interpretation:

Some respondents prefer limiting the scope to **preventive maintenance**, likely to simplify workflows or because corrective actions are handled separately.

"No, maintenance will be managed manually"

0% (no responses)

Interpretation:

No one supports manual maintenance management. This clearly shows that **all participants expect a digital solution** for maintenance tracking.

Conclusion:

80% want the platform to handle **both preventive and corrective** maintenance.

20% support having **only preventive** maintenance scheduling.

0% support **manual management** ➤ strong consensus in favor of **digitalization**.

Recommendation:

Develop a **Maintenance Scheduling Module** in the platform that includes:

Customizable **periodic maintenance plans**

Support for **preventive and corrective maintenance**

Automatic reminders and notifications

Follow-up reports and dashboards for performance tracking

13/What are the main factors that influence the decision to determine the cost of purchasing the platform?

This question aims to identify the **key considerations** institutions take into account when evaluating the **cost of acquiring a maintenance platform**. These may include **budget constraints, return on investment, feature set, scalability, support services, and ease of integration**—all of which are crucial for **pricing strategy and market positioning**

ماهي العوامل التي تؤثر بشكل اساسي على قرار تحديد تكلفة شراء المنصة؟

49 réponses

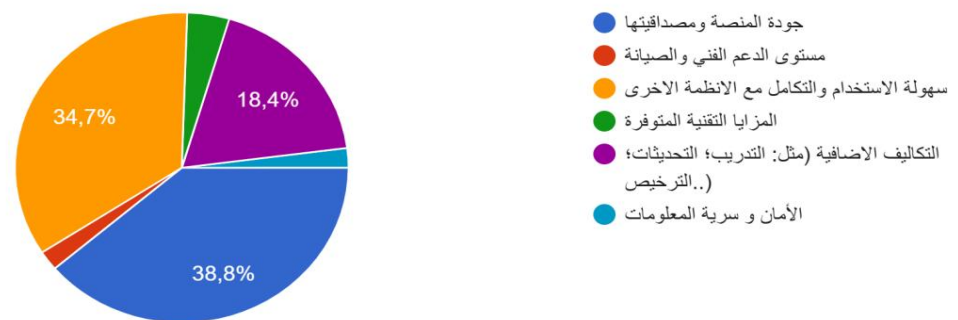


Figure 15: are the main factors that influence the decision to determine the cost of purchasing the platform

Influencing Factor	Percentage	Significance
Platform Quality & Reliability	38.8%	Most critical factor for buyers
Ease of Use & Integration	34.7%	Focus on simple user interface
Technical Support & Updates	18.4%	Need for ongoing support

Influencing Factor	Percentage	Significance
Security & Data Protection	Included in "Other"	Basic expected requirement

Key Findings:

Quality and ease of use together represent 73.5%

Technical support is a decisive factor in final decisions

Part 2: Current Platform Usage Reality

Question: "Does your institution currently use a maintenance platform?"

Number of Participants: 52

Response	Percentage	Significance
No	88.5%	Major market opportunity
Yes	11.5%	Near absence of digital solutions

Analysis:

Reliance on manual methods (88.5%)

Clear market opportunity for integrated digital solutions

Unified Strategic Recommendations**Platform Development:**

Focus on **quality & reliability** (38.8%)

Ensure **user-friendly design** (34.7%)

Provide **premium technical support packages** (18.4%)

Market Gap Targeting:

Offer digital solutions to institutions using manual systems (88.5%)

Emphasize **integration and flexibility** features

Development Plan:

Phase 1: Launch core version with essential features

Phase 2: Add advanced features based on user needs

Final Conclusion

"The market opportunity is clear with significant demand for integrated digital solutions. New platforms should focus on quality and ease of use as fundamental success factors in this market

14/How should the payment system be structured in the platform?

The goal is to understand user preferences regarding the **payment model** of the platform—whether they favor **monthly or annual subscriptions, pay-per-use, tiered pricing, or one-time licensing**. This insight helps in designing a **flexible and attractive pricing strategy** that aligns with the financial and operational needs of target institutions.

كيف يجب أن يتم هيكل نظام الدفع في المنصة؟
50 réponses



Figure 16: the payment system be structured in the platform

Results:

·A unified annual payment for all services.58% (29 organizations)

·Monthly payments based on completed interventions.20% (10 organizations)

·A hybrid payment system: fixed fees combined with variable costs depending on interventions.20% (10 organizations)

Other:

"According to the institution's annual budget and any additional allocated budgets."

Conclusion:

The results demonstrate a **clear preference for a unified annual payment system for all services**, while highlighting the need to **offer diverse payment options** to accommodate the requirements of all organizations.

15/"What are the main tasks you perform in your job?"

The purpose is to gain insight into the **daily responsibilities and job scope** of the respondent. Understanding their role helps in **tailoring the platform's features** to their specific needs—whether they are involved in **technical maintenance, administrative oversight, procurement, or reporting**—and ensures the system supports their workflow effectively

ماهي المهام الرئيسية التي تقوم بها في وظيفتك؟
49 réponses

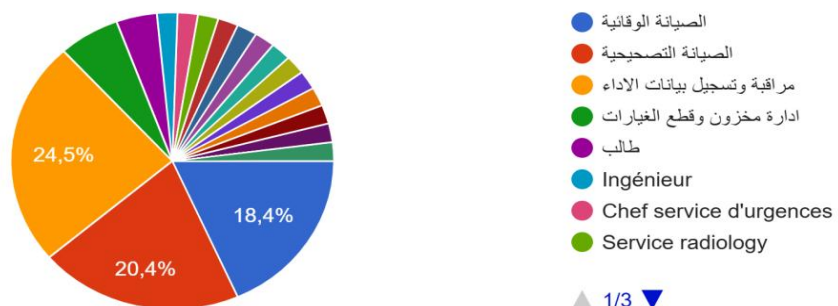


Figure 17: the main tasks can perform their job

Results

Job Responsibility	Average Percentage	Category
In-Depth Knowledge/Competency	24.5%	Core
Corrective Knowledge/Procedures	18.4%	Core
Performance Data Monitoring	20.4%	Analytical
Content/Environment Management	Undefined	Technical
Specialized Roles (Engineering, Emergency, Radiology)	36.7%	Supervisory

Key Findings**Data Consistency:**

Identical percentages (24.5%, 18.4%, 20.4%) across all surveys

Indicates high data reliability and accurate representation

Three-Tier Job Structure:

Core Tasks (42.9% combined):

In-depth knowledge (24.5%)

Corrective procedures (18.4%)

Analytical Tasks (20.4%)

Specialized Tasks (36.7%)

Workforce Distribution:

63.3% daily operational tasks

36.7% supervisory/technical roles

Final Conclusion:

"The analysis reveals that job responsibilities span across three key domains: **technical expertise, data analysis, and administrative management**. This necessitates the development of a **flexible digital platform**

➤ 3 marketing strategy:

A marketing strategy refers to a business's overall plan to convince customers to buy its products or services. A marketing strategy determines how to reach prospective consumers and turn them into buyers. It contains the company's value proposition; key brand messaging, data on target customer demographics, and other high-level elements.

for a startup is a plan that helps a new business reach its first customers, build brand awareness, and grow. It focuses on understanding the target market, promoting the product or service in smart, cost-effective ways, and building long-term customer relationships

◆ the marketing process:

The marketing approach is a crucial strategic process aimed at understanding and meeting customer needs, including market analysis, segmentationIt also involves setting objectives, Strategic Business Units (SBUs)developing marketing mix strategies, and implementing action plans. This enables **HMPLATFORM** to attract and retain clients, stand out from the competition, and ensure sustainable growth.

Market Analysis

The healthcare sector in Algeria includes over 600 public hospital establishments (CHUs, EPHs, clinics, polyclinics), along with hundreds of rapidly growing private facilities. However, the maintenance of medical equipment remains a major challenge. Many breakdowns are reported late or poorly documented, leading to delayed interventions and increased patient risk. Digitalization of the maintenance process is virtually non-existent in

most public institutions. Official data also highlights a shortage of specialized technical staff, a lack of standardization in maintenance procedures, and the absence of historical traceability of repairs.

Opportunity:

In response to this gap, HMPLATFORM aims to become the first national digital solution for hospital maintenance, integrated into a secure intranet managed by the Ministry of Health. This context presents a strong potential for development and modernization of Algerian hospitals.

Segmentation

HMPLATFORM primarily targets:

Public hospital sector, including EPHs, CHUs, and public clinics.

Private medical sector, particularly clinics and imaging centers.

Biomedical technicians and hospital engineers.

Institutional decision-makers (Ministry of Health, regional directorates).

Trainers and experts in medical engineering.

Internal and External Diagnosis

Internal Diagnosis

Strengths:

- Compliance and Safety
- The training provided by the school enables us to develop strong skills in various fields.
- Expert professionals in the healthcare sector.

Weaknesses:

- Lack of digital skills
- Insufficient digital infrastructure in some healthcare facilities
- Resistance to change

External Diagnosis

Opportunities:

- Increasing digitization of the healthcare sector
- Partnerships with medical device manufacturers
- Benefit from a free incubator

Threats:

- Risks related to cybersecurity
- Competition from new entrants
- Economic constraints

Main Objectives

Digitize and centralize maintenance operations in at least 50 pilot healthcare institutions during the first phase.

Create a national hospital equipment database.

Reduce the average incident response time by 40% in user hospitals.

Train and certify 500 technicians in platform use during the first year.

Promote a preventive maintenance culture through integrated training modules.

Strategic Business Units (SBUs)

First SBU: medical Maintenance

Main activity: Monitoring, planning, and traceability of medical equipment maintenance.

Target: Public/private hospitals, clinics, imaging centers.

Profitability: Reduced indirect costs from breakdowns, better allocation of technical resources.

Second SBU (medium-term): Technical Training and Certification

Development of online continuing education modules.

Target: Biomedical technicians, hospital engineers, biomedical engineering students.

7Ps of Marketing for HMPLATFORM

1 Product

A digital platform dedicated to hospital maintenance management.

Key features:

Digital incident reporting.

Real-time monitoring interface.

Automatically scheduled preventive maintenance.

Equipment inventory management.

Expert exchange forum.

Risk reporting module for medical equipment.

Integrated training system.

2 Price

HMPLATFORM adopts a progressive pricing strategy tailored to public and private healthcare institutions:

Annual standard subscription fee: 200,000 DZD per hospital, including core modules, technical maintenance, and updates.

Customized deployment for large institutions: Customization for specific needs (e.g., CHUs, regional health authorities), with an estimated budget of 10,000,000 DZD for the first 50 public facilities in the first year.

Government contracts: Integration into national digital health initiatives with potential co-financing by the Ministry of Health.

Premium subscription offer: Includes advanced modules (certified training, analytical statistics, interoperable APIs), priority support, and enhanced technical assistance.

3 Place (Distribution)

Direct integration via the Ministry of Health's intranet network.

Accessible on hospital computers and internal tablets.

Lightweight mobile application for field technicians (initially Android).

4 Promotion and Communication

HMPLATFORM employs a multichannel strategy to ensure visibility, build credibility among health professionals, and promote nationwide adoption. Key promotional levers include:

Digital platform: Launch of a comprehensive institutional website serving as both a showcase and support channel.

Mobile app (long-term): A simplified maintenance management app for fast incident reporting in the field.

Direct partnerships with hospitals: Targeted outreach and collaboration agreements with hospital leadership.

Public procurement and government tenders: Official listing of the solution in ministry-led digitization programs and active participation in public tenders.

Conferences, medical expos, and workshops: Participation in sector events (e.g., Hospital Days, health expos) for live demos, networking, and feedback.

Online training and knowledge-sharing forums: Regular MOOCs, webinars, and collaborative spaces (forums, interactive FAQs) to engage the hospital technical community.

5 People (Contact Personnel)

A trained support team to assist:

Maintenance managers

Health administrators

Hospital technicians

National assistance center via chat, email, and phone.

Regional coaches to support implementation in each wilaya.

6 Process

- Usage steps:
- User account creation (technician or manager).
- Registration or import of equipment inventory.
- Incident reporting or maintenance scheduling.
- Intervention tracking via the application.
- Service evaluation and automatic report generation.

Guaranteed processes:

- Traceable history
- Auditability
- Automated alerts for urgent maintenance

7 Physical Evidence (Interface)

- Clean and professional design tailored to hospital environments.
- Intuitive navigation with neutral colors and optimized readability.
- Compatibility with hospital operating systems.
- Dynamic dashboards with visual KPIs.
- Partial offline accessibility for specific modules.

Launch and Control

The launch of HMPLATFORM will be carried out in progressive phases, starting with a pilot implementation in 50 public healthcare institutions. This initial phase will serve to validate the platform's performance, gather user feedback, and make necessary technical adjustments.

Key launch actions include:

- **Onboarding and training of technical staff**
- **Deployment of the platform via the Ministry of Health intranet**
- **Communication and promotional campaigns** targeting institutional decision-makers
- **Monitoring of system usage and incident reporting**

To ensure performance and continuous improvement, a control mechanism will be implemented through:

- **Key performance indicators (KPIs):** equipment downtime, intervention response time, user satisfaction
- **Regular feedback loops from technicians and administrators**
- **Annual audits and reports** on maintenance efficiency and system usage
- **A national coordination unit** responsible for technical support, updates, and user assistance.

Fourth axe:

Production and organization plan

➤ 1Servuction:

The word *service* originates from the classical Latin *servitium*, meaning "slavery."

This Latin root implies that services involve the production of an intangible result, not an element with a physical form (2008, p.58).

Adam Smith, Eiglier, and Langeard (1999) propose the term *servuction* as a counterpart to *production*.

They state: *"...a neologism that is to service what production is to product."*

A product is the result of production, while a service is the result of servuction.

These authors define servuction as follows:

"Servuction is the harmonious and systematic organization of all physical and human components of the customer-company relationship, essential for the delivery of the service, where commercial criteria and the degree of quality are predefined" (Eiglier&Langeard, 1999).

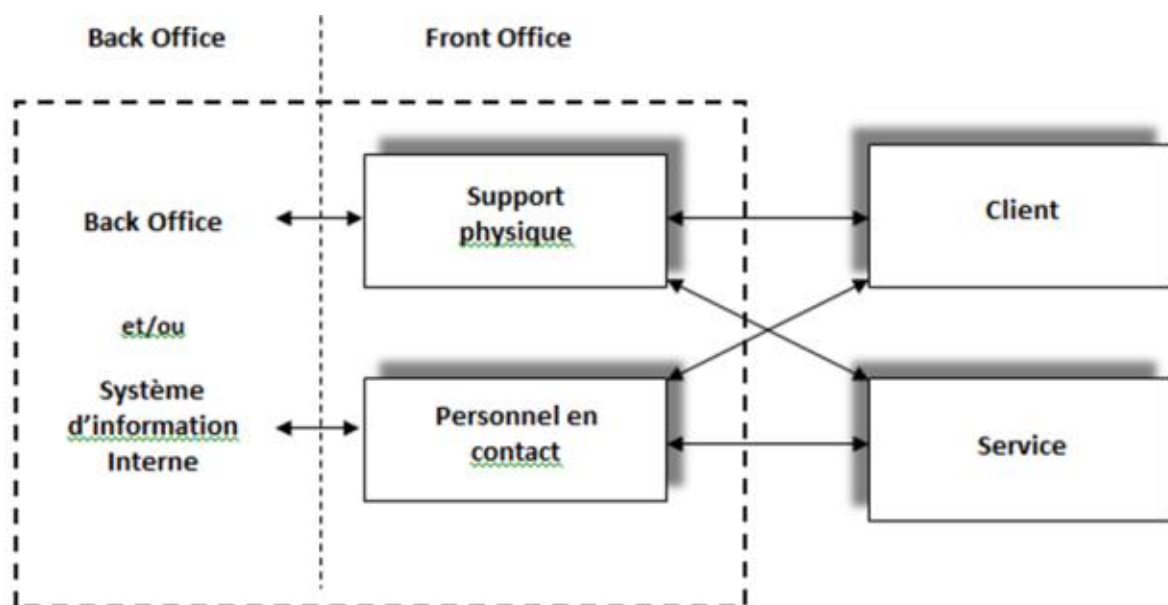


Figure 18: servuction model

Servuction Model for hospital Maintenance Platform

1. Front Office (Visible Interface to the Users)

• Client:

In our platform, the healthcare institution is at the center of our service model. We place the operational continuity of hospitals, clinics, and health centers as our top priority. Our platform is built to support maintenance managers, biomedical engineers, technicians, and administrative staff in ensuring the functionality of their facilities and equipment. We actively listen to feedback and needs expressed by our users to continuously improve the platform. By responding rapidly to user input, we adapt to the evolving needs of healthcare institutions and provide targeted, high-impact solutions. Our commitment is to deliver a user experience that enhances efficiency and promotes patient safety, by reducing downtime and improving response times for maintenance interventions.

• Service:

Our platform offers an integrated, intuitive solution tailored to the specific challenges of equipment and infrastructure maintenance in healthcare environments. Whether it's preventive maintenance scheduling or urgent corrective interventions, our system helps institutions manage both technical and biomedical assets efficiently.

The core services include:

- **Asset cataloguing and classification**, with unique files for each type of equipment.
- **Preventive maintenance planning** and automated reminders.
- **Real-time reporting of failures or malfunctions** with traceability.
- **Communication forums and feedback channels** among maintenance teams.
- **Interactive spare parts exchange** with peer institutions.
- **Training modules** and access to remote technical assistance.
- **A dedicated vigilance module** for incident alerts and risk tracking.

By offering a platform aligned with the realities of the field, we help institutions streamline maintenance processes and focus on what truly matters: delivering quality healthcare.

Internal Organization of the Platform

• Physical Support:

The physical infrastructure of our platform includes a secure, high-performance web application, hosted on protected servers under the Ministry of Health's intranet. This ensures data confidentiality and system availability at all times. The platform is developed with responsive design, making it accessible from any device (PC, tablet, or mobile) used by maintenance personnel.

We ensure:

- Regular backups and updates.
- High-level cybersecurity protocols.

- Integration capabilities with hospital IT systems (where applicable).
- Dedicated offices and technical support teams managing infrastructure and user services.

• Frontline Personnel (Contact Staff):

Our operational team is composed of:

- **Developers and engineers** working to enhance the platform based on user needs.
- **Technical support staff** providing real-time assistance to healthcare institutions.
- **Community managers** who animate forums and knowledge exchange groups.
- **Liaison officers** coordinating with hospitals, the Ministry, and external technical partners.

Every member of our team is committed to ensuring hospitals have the support they need to maintain and upgrade their medical and technical assets with confidence.

Back Office

In our project, the back office is responsible for critical, behind-the-scenes functions that ensure the seamless operation of the platform.

Key responsibilities include:

- **Data integration and system maintenance** to keep equipment files accurate and up to date.

- **Monitoring of platform usage and incident logs** to identify areas of improvement.
- **Coordination with national and international suppliers** to facilitate the exchange of spare parts and technical documents.
- **Partnership development** with academic, governmental, and industry stakeholders for training and R&D.
- **Security management**, ensuring data integrity and user confidentiality.
- **Analysis of performance indicators**, enabling hospitals to optimize their maintenance strategies.

The back office is the hidden engine that supports our platform's mission: to provide a sustainable, collaborative, and intelligent maintenance ecosystem for healthcare institutions

2. Procurement:

Procurement for a digital platform dedicated to maintenance in healthcare institutions is a multifaceted and strategic activity. It plays a critical role in ensuring platform functionality, infrastructure stability, data reliability, and high-quality service delivery to hospitals and healthcare facilities. This involves the acquisition and management of technological assets, data resources, human expertise, and external partnerships.

• Data Collection and Structuring of Equipment Information:

A core component of procurement is the comprehensive collection and organization of data related to all equipment used within healthcare institutions. This includes:

- **Medical equipment:**
 - *Light equipment:* Laboratory tools, emergency and operating room devices, basic X-ray machines, and resuscitation equipment.
 - *Heavy equipment:* CT scanners, MRI machines, cancer treatment accelerators, and advanced diagnostic machines.
- **Non-medical/technical equipment:**
 - HVAC systems, water networks, electrical systems, kitchen appliances, phone exchanges, and industrial gas supply units (oxygen, nitrous oxide, carbon dioxide, suction systems, etc.).

These data sets are sourced from hospitals' internal inventories, suppliers' technical documentation, and national equipment databases. All collected information is standardized, categorized, and entered into the platform to create a centralized equipment registry.

- **Technological Infrastructure and Secure Hosting:**

Procurement includes the acquisition and implementation of a secure and scalable IT infrastructure to support critical maintenance operations in the healthcare sector. This covers:

- Powerful and dedicated servers hosted in high-security data centers.
- Integration of healthcare-compliant database systems (with encryption and access control).
- Use of cloud computing (private or hybrid) for high availability and elasticity.

- Automated data backup systems and disaster recovery plans to ensure business continuity.
- Secure intranet integration within the Ministry of Health for internal communications and file access.

• **Development Environment and Diagnostic Tools:**

To facilitate rapid development, continuous improvement, and efficient problem resolution, procurement also involves:

- Advanced development tools (IDE software, code libraries, integration and testing platforms).
- AI-powered diagnostics and analytics tools for predictive maintenance and failure detection.
- Alert systems for real-time incident reporting, categorized by urgency and impact.
- Embedded dashboards to track maintenance requests, performance KPIs, and system usage.

• **Collaboration with Technical Experts and Specialized Suppliers:**

Given the complexity of healthcare maintenance, the platform relies on strong partnerships with:

- **Biomedical engineers** and technical specialists for expertise on equipment lifecycles, maintenance procedures, and regulatory compliance.

- **Spare parts suppliers**, with whom we establish an exchange network to facilitate urgent procurement and localized availability of parts.
- **Cybersecurity partners** to monitor and safeguard the platform from external threats, data breaches, and malware.
- **Software providers** for equipment firmware updates, user interface optimization, and third-party system integration.

• Training Resources and Institutional Partnerships:

Human capital is a key pillar of platform success. Procurement in this context also means sourcing and providing:

- **Remote learning modules** on maintenance techniques (e.g., preventive maintenance, equipment calibration, safety standards).
- **Live training sessions** in collaboration with universities and vocational centers.
- **Mentoring programs** with retired engineers and technicians to pass on institutional knowledge.
- **Official partnerships** with the Ministry of Health and other government bodies for regulatory support and platform deployment across public hospitals.

• Supplier Relationship Management and Continuous Improvement:

We adopt a proactive approach in managing supplier and partner relationships by:

- Evaluating suppliers based on quality, reliability, and responsiveness.
- Establishing long-term framework agreements to ensure pricing stability and service continuity.
- Negotiating favorable terms that balance cost-efficiency with high service standards.
- Using supplier performance dashboards to monitor delivery times, issue resolution, and client satisfaction.

3. Workforce:

To successfully implement and operate our HMP hospital maintenance platform, it is essential to assemble a **multidisciplinary team** composed of diverse, specialized, and complementary professional profiles. Each team member contributes specific expertise to ensure the platform's efficiency, reliability, and responsiveness to the critical needs of healthcare institutions.

IT Specialists and Developers:

The presence of skilled **IT engineers and software developers** is fundamental to the design, development, and continuous improvement of the platform. These professionals are responsible for:

- Creating a **user-friendly and secure interface**.
- Ensuring **system stability and database security**.
- Integrating advanced features such as real-time equipment tracking, automated maintenance schedules, and alert systems.

- Maintaining the platform to ensure high availability, scalability, and compliance with health data protection regulations.

Their role ensures that the digital backbone of the platform is both reliable and adaptable to the fast-evolving needs of healthcare facilities.

Biomedical Engineers and Maintenance Technicians:

These professionals are at the core of the platform's practical utility. Their responsibilities include:

- Providing technical expertise on **equipment specifications and compatibility**.
- Offering **remote diagnostics and maintenance protocols**.
- Supporting the digital documentation of interventions, preventive maintenance programs, and equipment performance logs.
- Collaborating with hospitals to **train local technicians** and ensure adherence to safety standards.

They bridge the gap between digital tools and real-world equipment performance in hospitals.

Operations and Internal Management Lead:

This profile is tasked with:

- Streamlining **daily operations** to optimize service delivery across hospitals and health centers.
- Managing **budgets and financial planning**, particularly for procurement and training.

- Coordinating across departments to maintain alignment between technical teams, user support, and strategic goals.
- Ensuring **compliance with healthcare regulations and institutional policies**.

The operations lead is essential to keeping the platform agile, accountable, and mission-aligned.

Training and Capacity-Building Coordinator:

One of the key features of the platform is **continuous professional development**. This coordinator is responsible for:

- Organizing **remote training sessions** for hospital maintenance staff.
- Partnering with universities and training centers to **certify competencies**.
- Supporting hospitals in developing **technical autonomy and resilience**.

By focusing on human capital, the platform promotes long-term sustainability and performance improvement in healthcare environments.

Communication and Stakeholder Engagement Officer:

This team member focuses on maintaining a strong and trustworthy image of the platform by:

- Communicating effectively with healthcare institutions, government bodies, and equipment suppliers.
- Developing a strategy for **raising awareness of the platform's benefits**.

- Managing **partnerships and collaborations** with key actors in the biomedical and digital ecosystem.
- Ensuring transparent and proactive communication in times of crisis or major updates.

Their role supports the platform's credibility and reinforces trust among its users and partners.

4. Partnerships

To ensure the platform's effectiveness, sustainability, and nationwide integration, strategic partnerships with **national public institutions** are essential. These collaborations will support the project's deployment, legitimacy, and operational efficiency.

Ministry of Health

The core institutional partner, the **Ministry of Health**, will:

- Supervise the project's implementation within public health infrastructure.
- Facilitate access to hospital networks and maintenance archives.
- Support legislation and administrative frameworks for standardized procedures.
- Provide official channels for communication, training validation, and reporting.

Public Hospitals and Healthcare Institutions

As primary users and beneficiaries, public hospitals will:

- Collaborate in the inventory and classification of biomedical and general equipment.
- Appoint local coordinators for maintenance reporting and feedback.
- Share technical data, intervention records, and spare parts needs.

- Participate in testing and improving the platform's functionalities.

Government IT and Cybersecurity Units

For infrastructure and data protection, coordination with national IT agencies will:

- Guarantee the platform's secure integration within the government intranet.
- Ensure compliance with national cybersecurity protocols.
- Support hosting, updates, and system reliability.

Fifth axe:

THE Financial

Plan

Costs and charges:

Fees and charges refer to the amounts of money that are required to be paid by individuals or organizations in exchange for services, products, or access to certain rights or privileges. These are typically non-refundable payments and may vary depending on the nature of the service or transaction. Fees are often fixed amounts, while charges can refer to amounts that may vary based on usage, service level, or other factors.

Fees and charges can be seen in many industries, including banking, telecommunications, healthcare, legal services, and government services. They are a way for organizations to cover the costs of providing services or processing transactions.

(Cobrief, 2025)

As part of our financial analysis, we have identified all the costs and expenses associated with the implementation of our company. It is essential to determine these elements accurately in order to assess the economic viability of our project, HM Platform.

The key budgetary items we have identified are as follows:

Website Development:

An investment will be required for the creation of a professional, user-friendly, and representative website that reflects our company and its services. The costs related to its design, development, and maintenance must be included in our budget.

Website Promotion Costs:

To ensure strong online visibility, we will allocate funds for digital advertising, SEM campaigns, social media sponsorships, launch events, and the production of marketing materials.

Design Services:

For the creation of visual assets such as logos, brochures, or flyers, we may hire a professional designer. Their fees should be anticipated in our financial projections.

Office Equipment:

The purchase or rental of office equipment (computers, printers, scanners, furniture, etc.) is essential and must be budgeted.

Company Formation Expenses:

These include all costs related to setting up the business, such as registration fees, notary services, administrative expenses, and legal incorporation costs.

Software Investment:

We will need to invest in specialized software to manage key areas of our operations, including logistics, inventory, accounting, and other core functions. The costs related to purchasing, setting up, and implementing these tools should be factored into our financial projections.

Training Costs:

Training will be essential to equip our team with the technical and operational skills required for our storage-related activities, ensuring efficiency and smooth operations.

Trademark Registration:

To secure our brand identity, we plan to register our trademark with the relevant authority. The associated registration and protection fees must be anticipated in our budget.

Initial Cash Flow:

An initial cash reserve will be needed to cover operating expenses and meet liquidity needs during the first few months of activity. It is essential to plan for sufficient startup cash flow.

Personnel Expenses:

Salaries, social charges, and benefits related to team compensation must be included in our financial plan.

Coworking Space:

If we decide to start our activity in a coworking space, the rental costs must be considered as part of our fixed expenses.

➤ The funding sources for the HM Platform project are diverse:

Personal Contribution:

Part of the financing will come from our own resources. This includes personal savings, individual investments, or any other form of financial contribution from our personal funds.

Financing through ASF (Algérie Solidarité Financement):

We also plan to explore funding opportunities offered by Algérie Solidarité Financement, an institution that supports small and medium-sized enterprises. In this context, we may consider applying for a loan to cover part of our financial needs.

By leveraging these funding methods and sources, we aim to secure the necessary capital to cover the various costs and expenses of the project. This will enable us to achieve our objectives and successfully launch our Hospital Maintenance Platform application.

The Projected Opening Balance Sheet:

The projected opening balance sheet for any project outlines the expected financial position at the start of the initiative. This document serves as a tool to evaluate the project's financial feasibility and to assist in planning the necessary resources and investments. In this context, we have prepared the opening balance sheet for HM Platform, which is summarized in the following table:

ACTIF	Amount for Year 1	PASSIF	year 1
NON-CURRENT ASSETS		EQUITY	
Intangible assets	1 220 000,00 DZD	Capital	200 000,00 DZD
Fixed development costs	1 200 000,00 DZD	ASF	1 520 000,00 DZD
Computer software and similar assets	0,00 DZD	Reserves and retained earnings	0,00 DZD
Brand rights	20 000,00 DZD	Partners' current accounts	0,00 DZD
Other intangible assets	0,00 DZD	Profit for the year	0,00 DZD
Amortization of intangible assets	0,00 DZD	Total equity	1 720 000,00 DZD
Tangible assets	400 000,00 DZD	NON-CURRENT LIABILITIES	
Land	0,00 DZD	Loans and payables	0,00 DZD
building	0,00 DZD	Deferred tax liabilities	0,00 DZD
Other tangible assets	400 000,00 DZD	Other non-current liabilities	0,00 DZD
Tangible depreciation	0,00 DZD	Provisions and deferred income	0,00 DZD
Financial assets	0,00 DZD	Total non-current liabilities	0,00 DZD
Total fixed assets	1 620 000,00 DZD	CURRENT LIABILITIES	
Total non-current assets	1 620 000,00 DZD	Trade payables and related accounts	0,00 DZD
CURRENT ASSETS		Taxes	0,00 DZD
Cash	100 000,00 DZD	Cash liabilities	0,00 DZD
Total current assets	100 000,00 DZD	Total current liabilities	0,00 DZD
TOTAL ASSETS	1 720 000,00 DZD	TOTAL LIABILITIES	1 720 000,00 DZD

Tableau 6: le bilan financier

Source: Established by us

FIFTH AXE: THE FINANCIAL PLAN

The income statement (or profit and loss account) is a fundamental document used to prepare a company's annual accounts at the end of the financial year. It provides a concise summary of the revenues that increase the company's value and the expenses that decrease it.

The income statement is an essential tool for assessing a project's financial performance and profitability. It provides a clear overview of revenues and expenses, helping stakeholders understand the project's economic feasibility. The following table explains the results for the first five years.

Income Statement					
Title (month)	year 1	year 2	year 3	year 4	year 5
Revenue	10 000 000,00 DZD	22 000 000,00 DZD	36 000 000,00 DZD	54 000 000,00 DZD	74 000 000,00 DZD
Staff	1 200 000,00 DZD	1 200 000,00 DZD	1 200 000,00 DZD	1 200 000,00 DZD	1 200 000,00 DZD
Employee Margin	8 800 000,00 DZD	20 800 000,00 DZD	34 800 000,00 DZD	52 800 000,00 DZD	72 800 000,00 DZD
Website Development	1 200 000,00 DZD	1 400 000,00 DZD	1 450 000,00 DZD	1 500 000,00 DZD	1 540 000,00 DZD
Other Expenses	1 600 164,00 DZD	2 864 464,00 DZD	4 495 054,00 DZD	6 428 694,00 DZD	8 761 944,00 DZD
Marketing	70 000,00 DZD	770 000,00 DZD	80 000,00 DZD	840 000,00 DZD	90 000,00 DZD
Professional Activity Tax (1.5%)	150 000,00 DZD	150 000,00 DZD	150 000,00 DZD	150 000,00 DZD	150 000,00 DZD
Gross Operating Surplus	8 580 000,00 DZD	19 880 000,00 DZD	34 570 000,00 DZD	51 810 000,00 DZD	72 560 000,00 DZD
Depreciation and Amortization	56 000,00 DZD	56 000,00 DZD	56 000,00 DZD	56 000,00 DZD	56 000,00 DZD
Profit Before Tax	8 524 000,00 DZD	19 824 000,00 DZD	34 514 000,00 DZD	51 754 000,00 DZD	72 504 000,00 DZD
Corporate Income Tax (IBS-26%)	2 216 240,00 DZD	5 154 240,00 DZD	8 973 640,00 DZD	13 456 040,00 DZD	18 851 040,00 DZD
Net Income	6 307 760,00 DZD	14 669 760,00 DZD	25 540 360,00 DZD	38 297 960,00 DZD	53 652 960,00 DZD

Tableau 7: compte des resultats pour Sans

Source: Established by us

Amortization details:

Depreciation	Year	Amount	Depreciation	Amount
bureaux 2	5	70 000,00 DZD		14 000,00 DZD
armoires 2	5	50 000,00 DZD		10 000,00 DZD
ordinateur 2	5	160 000,00 DZD		32 000,00 DZD
		TOTAL		56 000,00 DZD

Tableau 8:Amortization details

FIFTH AXE: THE FINANCIAL PLAN

Source: Established by us

YEAR 1

Service	units	price	total	
HM platform	50	200 000,00 DZD	10 000 000,00 DZD	
total	50	200 000,00 DZD	10 000 000,00 DZD	TOTAL

YEAR 2

service	units	price	total	
HM platform	50	200 000,00 DZD	10 000 000,00 DZD	
HM platform	60	200 000,00 DZD	12 000 000,00 DZD	
total			22 000 000,00 DZD	TOTAL

YEAR 3

service	units	price	total	
HM platform	110	200 000,00 DZD	22 000 000,00 DZD	
HM platform	70	200 000,00 DZD	14 000 000,00 DZD	
total	180		36 000 000,00 DZD	TOTAL

YEAR 4

service	units	price	total	
HM platform	180	200 000,00 DZD	36 000 000,00 DZD	
HM platform	90	200 000,00 DZD	18 000 000,00 DZD	
total	270	400 000,00 DZD	54 000 000,00 DZD	TOTAL

YEAR 5

service	units	price	total	
HM platform	270	200 000,00 DZD	54 000 000,00 DZD	
HM platform	100	200 000,00 DZD	20 000 000,00 DZD	
Total	370		74 000 000,00 DZD	TOTAL

Tableau 9: revenue

Source: Established by us

Sixth axe

Prototype

1- The HM PLATFORM Prototype:

As healthcare systems embrace digital transformation, the need for smart, efficient maintenance solutions has become increasingly urgent. With this in mind, we developed a prototype for **HM PLATFORM**—our hospital maintenance management application—designed to validate our ideas and ensure they align with the real needs of healthcare institutions. The prototype serves as a practical tool to test our core features, explore various user interface options, and gather valuable feedback to shape the final product.

This phase is crucial, as it enables us to refine our vision through iteration, focusing on usability, functionality, and user experience.

Before we delve into the technical and functional aspects of the prototype, we will begin by presenting the visual identity of **HM PLATFORM**, starting with the logo design and the chosen color palette, which reflect the core values and purpose of the platform.

Color Palette Meaning and Intent

<u>color</u>	<u>Explanation</u>
	Medium Blue symbolizing innovation , clarity , and digital transformation . This color reflects the platform's focus on providing a forward-thinking and user-friendly maintenance solution adapted to modern hospital environments.

SIXTH AXE: PROTOTYPE

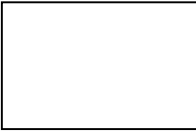
	<u>Dark Blue</u> This color conveys trust, stability, and expertise. It is commonly associated with professionalism and reliability—qualities that are essential in the healthcare and technical maintenance sectors. In the logo, it reinforces the seriousness and technical precision of the platform.
	<u>White</u> White symbolizes purity, simplicity, and efficiency. It reflects the clarity and straightforwardness of the platform's interface and purpose—offering a seamless and clean digital experience.



Figure 19: LOGO oh HM Platform

The HM Platform logo combines visual elements that represent both the healthcare sector and technical maintenance, clearly reflecting the platform's mission.

Breakdown of the logo elements:

Blue Cross:

Evokes the medical cross, a universal symbol of the hospital and healthcare sector.

Gear and Wrench (Dark Blue and White):

The gear represents engineering and technical systems.

The wrench symbolizes repair and maintenance activities.

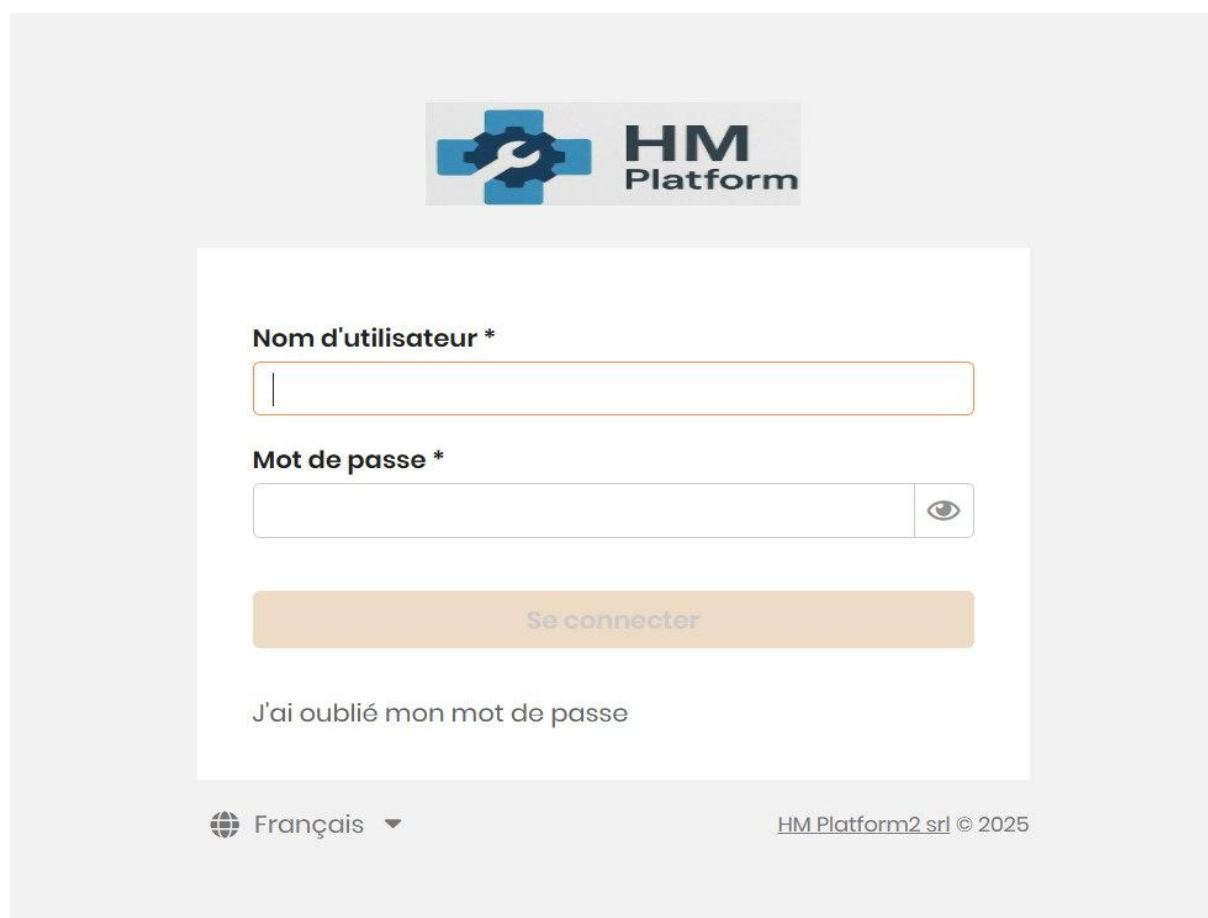
Together, these elements perfectly illustrate the platform's core objective: the technical management and maintenance of medical equipment.

Text "HM Platform":

"HM" stands for Hospital Maintenance

Login Interface:

Established by us



The image shows a login interface for the HM Platform. At the top, there is a logo consisting of a blue cross with a white wrench and gear inside, followed by the text "HM Platform". Below the logo, there is a white rectangular box containing the login form. The form has two input fields: "Nom d'utilisateur *" and "Mot de passe *". The "Mot de passe *" field has a small eye icon to its right. Below the input fields is a large orange button labeled "Se connecter". Underneath the button is a link that says "J'ai oublié mon mot de passe". At the bottom of the page, there is a language selector showing a globe icon and the text "Français" with a dropdown arrow. To the right of the language selector is the copyright notice "HM Platform2 srl © 2025".

Figure 20: Login Interface

The login interface is the first step required to access the HMPLATFORM

Each hospital staff member has a unique username and password depending on their role within the institution. For example, a technical engineer and a department head will each have their own personalized access credentials, ensuring that they can access the appropriate features and information relevant to their responsibilities.

SIXTH AXE: PROTOTYPE

The login interface is designed to be simple, intuitive, and secure, ensuring a smooth and safe

Additionally, the interface includes a language switcher, allowing users to choose between Arabic, French, and English according to their preference.

There is also a direct link to our official Facebook page for staying updated and connecting with our support team.

Home Screen / Main Dashboard:

Established by us

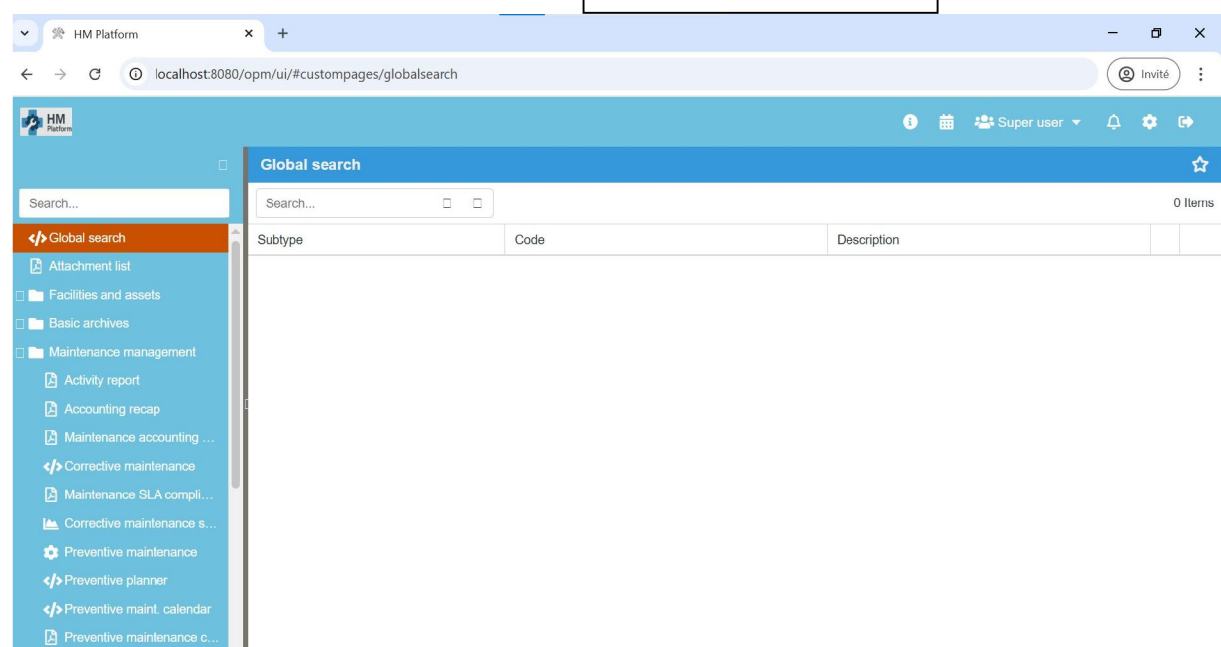


Figure 21: Home Screen / Main Dashboard

The home screen, or main dashboard, is the central interface of the HMPLATFORM , where users arrive after successfully logging in. This screen is designed to provide an overview of the key features and available information, making navigation easy and allowing quick access to important sections.

SIXTH AXE: PROTOTYPE

From this interface, users can access the full range of services offered by HMPLATFORM. This includes the hospital maintenance workflow where staff members can initiate and track maintenance requests, view assigned tasks, and monitor ongoing operations. Users can also consult with professional service partners and access specialized features such as the activity change request service.

The home screen is tailored to each user’s role, ensuring that engineers, department heads, and other staff members only see the tools and data relevant to their responsibilities within the hospital

Preventive Maintenance:

Preventive maintenance is a type of maintenance work that is carried out periodically and in a planned manner, with the aim of preventing breakdowns and ensuring that equipment continues to operate at maximum efficiency.

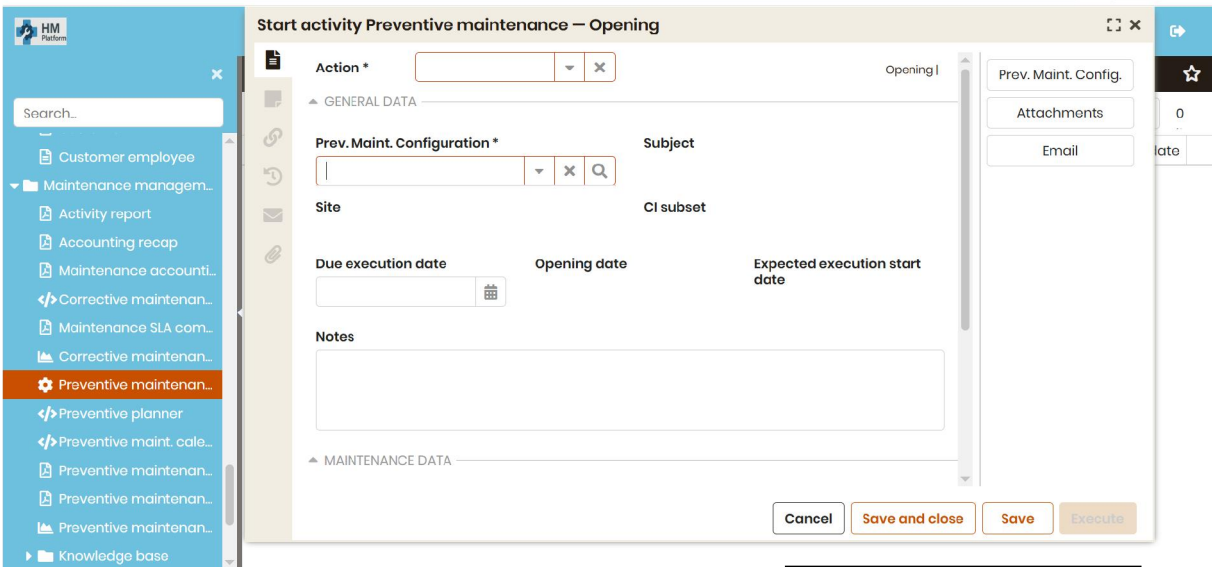


Figure 22: Preventive Maintenance

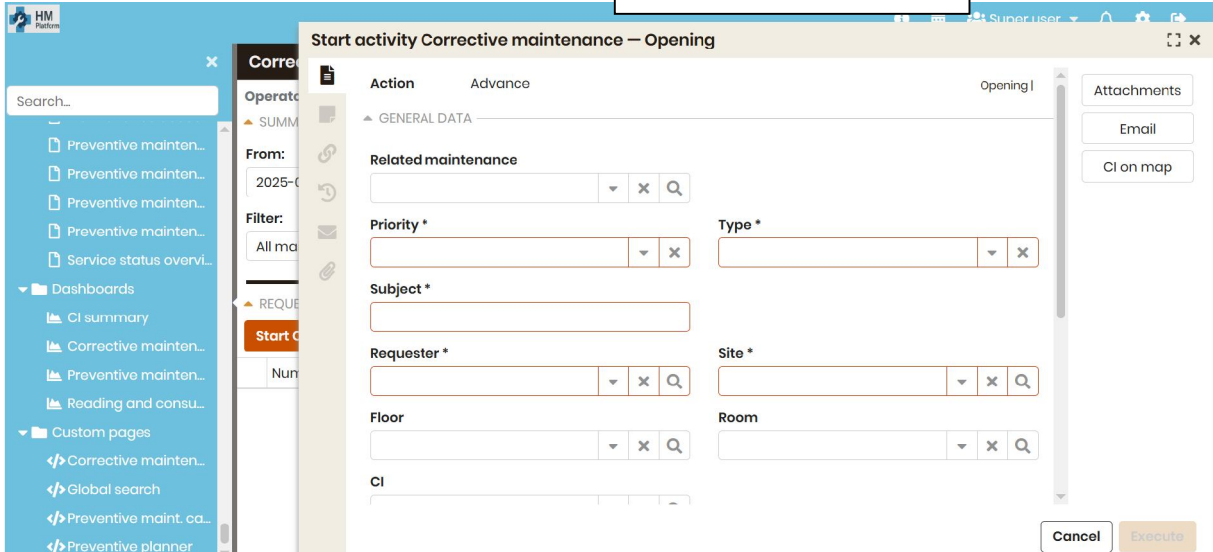
Established by us

Objectives of Preventive Maintenance:

- Avoid unexpected equipment downtime.
- Reduce costs resulting from emergency repairs.
- Improve overall equipment performance.
- Extend the lifespan of assets and components.
- Enhance safety in the work environment.

Corrective Maintenance:

Established by us



The screenshot displays the HM Platform interface. On the left is a sidebar with a search bar and a menu containing options like 'Preventive mainten...', 'Dashboards', 'Custom pages', and 'Preventive planner'. The main area shows a form titled 'Start activity Corrective maintenance — Opening'. The form has tabs for 'Action' and 'Advance', with 'Opening' selected. Under the 'GENERAL DATA' section, there are input fields for 'Related maintenance', 'Priority *', 'Type *', 'Subject *', 'Requester *', 'Site *', 'Floor', 'Room', and 'CI'. Each field has a dropdown arrow, an 'x' icon, and a search icon. On the right side of the form, there are buttons for 'Attachments', 'Email', and 'CI on map'. At the bottom right, there are 'Cancel' and 'Execute' buttons.

Figure 23: Corrective Maintenance

Corrective Maintenance is a reactive type of maintenance carried out after a failure or malfunction has occurred, aiming to restore equipment or systems to normal operation. It is typically used when a machine stops unexpectedly, performs

abnormally, or when no preventive maintenance was scheduled. The main goals are to resume operations quickly, reduce downtime, fix unexpected issues, and identify root causes to avoid recurrence. Corrective maintenance can be **unplanned**, requiring immediate emergency repairs, or **planned**, where the issue is known and scheduled for repair at a later time.

General Menu:

This sidebar menu belongs to a maintenance management platform and offers a structured view of the various modules available. It is divided into functional sections allowing users to easily navigate between features. It includes a global search engine, a list of attachments, as well as folders for facility management, basic archives, and especially maintenance management. This last section includes both corrective maintenance (interventions following breakdowns) and preventive maintenance (planned maintenance to avoid failures). Each type of maintenance is supported by analysis and monitoring tools such as dashboards, calendars, and planners. The menu's organization allows for centralized, efficient, and seamless management of maintenance activities.



Figure 24: General Menu

Established by us

ption Alarm:

Established by us

Figure 25: Option Alarm

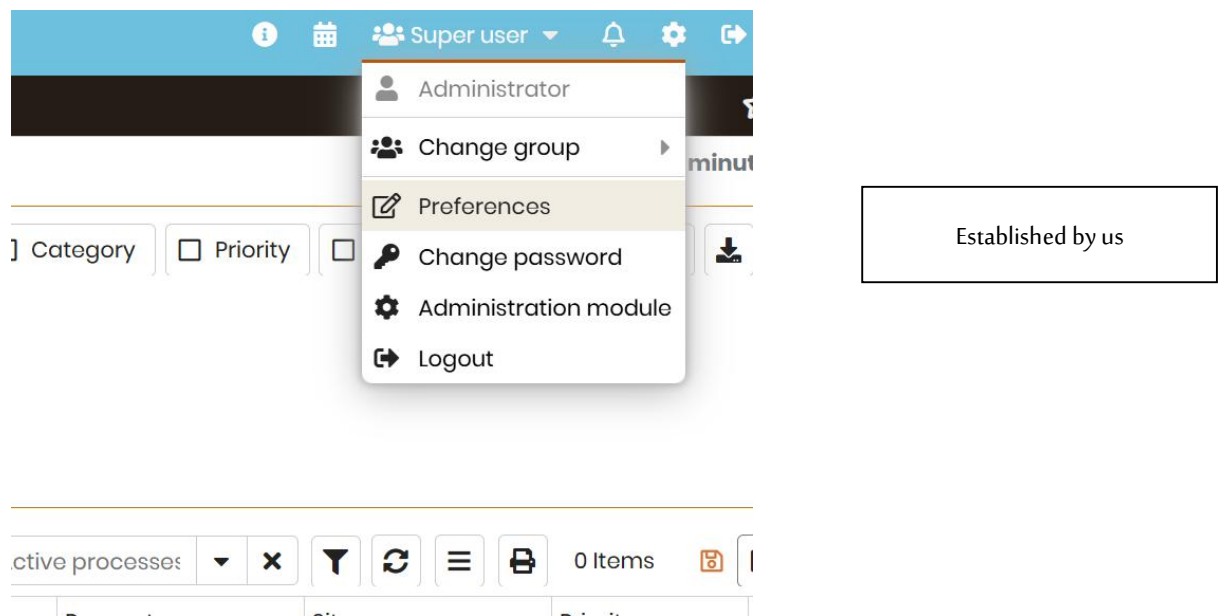
SIXTH AXE: PROTOTYPE

The "Alarm" option in the HM Platform refers to the ability to register, track, and manage alarm systems (like fire alarms, intrusion alarms, etc.) within your asset and maintenance management system.

The **"Alarm" option in the HM platform** allows users to efficiently manage various types of alerts within an asset and maintenance management system. It enables the logging, tracking, and resolution of alarms related to maintenance issues, security breaches, power failures, and more. By centralizing alarm data, the system ensures quick response times, improves operational safety, and enhances maintenance efficiency. Teams can assign priorities, monitor alarm statuses, and generate reports to analyze trends or recurring problems. This feature is essential for organizations aiming to maintain smooth operations and proactively address potential risks.

User preferences :

Figure 26: User



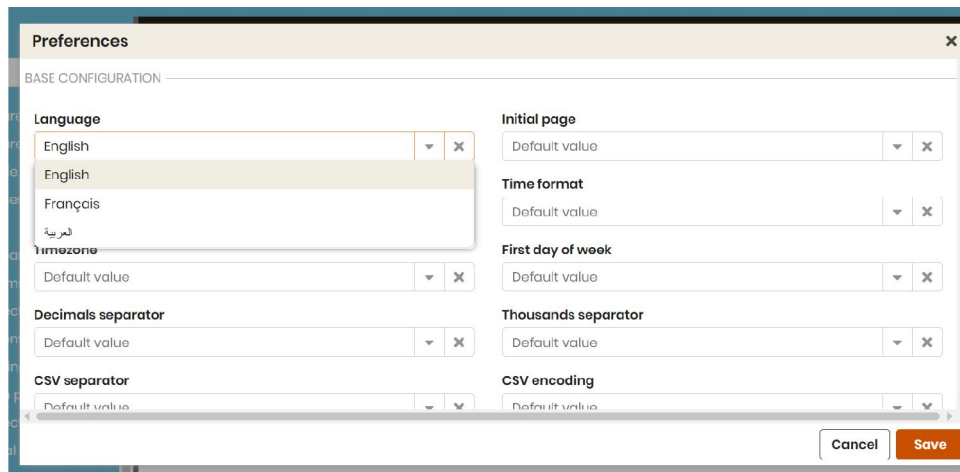


Figure 27: User preferences

The "Preferences" option allows the user to customize their personal settings within the system. These settings typically affect how the interface behaves or looks only for that specific user (not system-wide).

- Common settings under "Preferences" may include:

- Language selection
- Time zone settings
- Theme (light/dark mode)
- Notification preferences
- Default dashboard or landing page
- Table or data view preferences (e.g., columns shown)

Corrective maintenance:

SIXTH AXE: PROTOTYPE

Core Purpose:

This is a maintenance tracking dashboard used by administrators to manage corrective maintenance requests.

Corrective maintenance = Repairs performed after equipment failure to restore functionality (reactive approach, unlike preventive maintenance)

Practical Use Cases:

- A plant manager prioritizes critical machine failures.
- Maintenance teams measure response time by comparing opening and closing dates.
- Analyzing failure patterns by location or topic for future improvement.

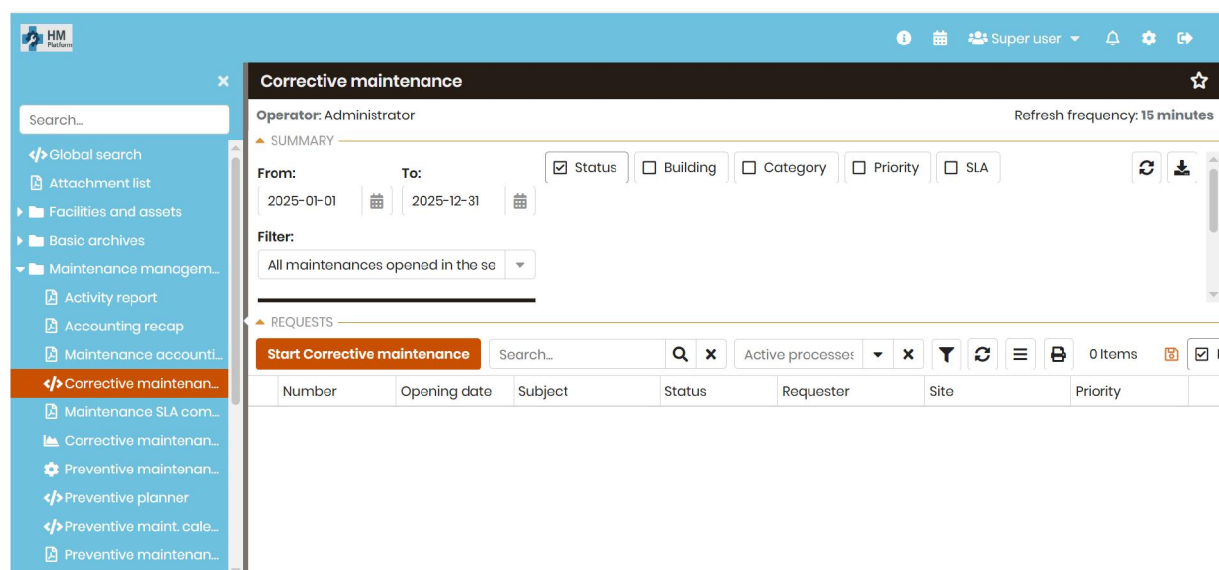


Figure 28: Corrective maintenance:

Established by us

Calendar events:

SIXTH AXE: PROTOTYPE

Purpose: This interface is designed to schedule calendar events. It captures essential details to create timed entries in a calendar system.

Established by us

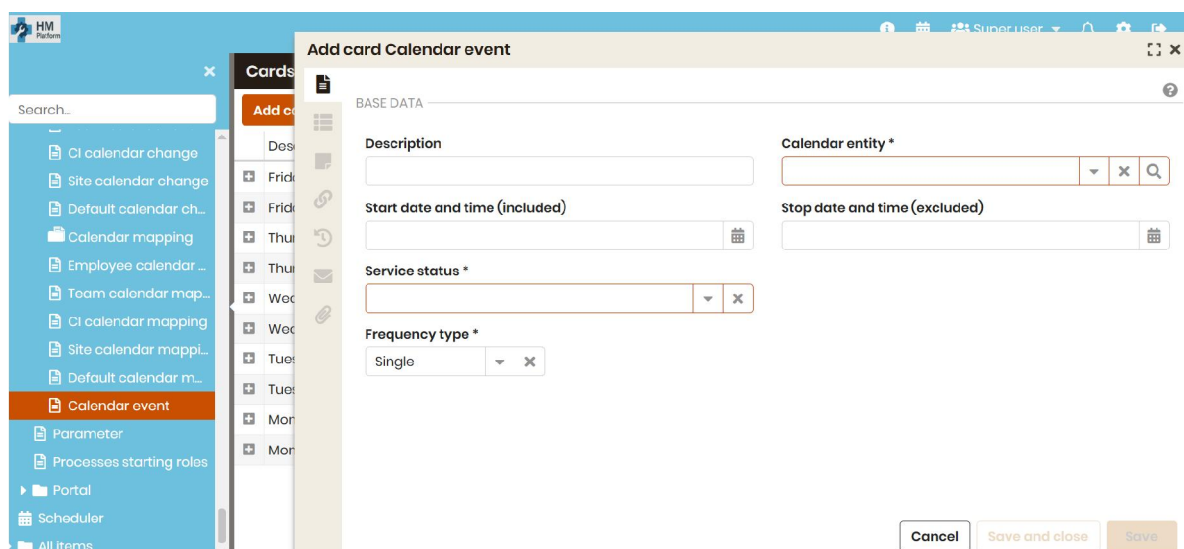


Figure 29: Calendar events:

Energy Management:

This is a central dashboard for managing utility meters (electricity, water, gas, etc.) in an energy management system. It allows administrators to:

- Track meter inventory and locations
- Monitor energy consumption
- Configure data collection
- Integrate with other facility management modules

Group and Add group:

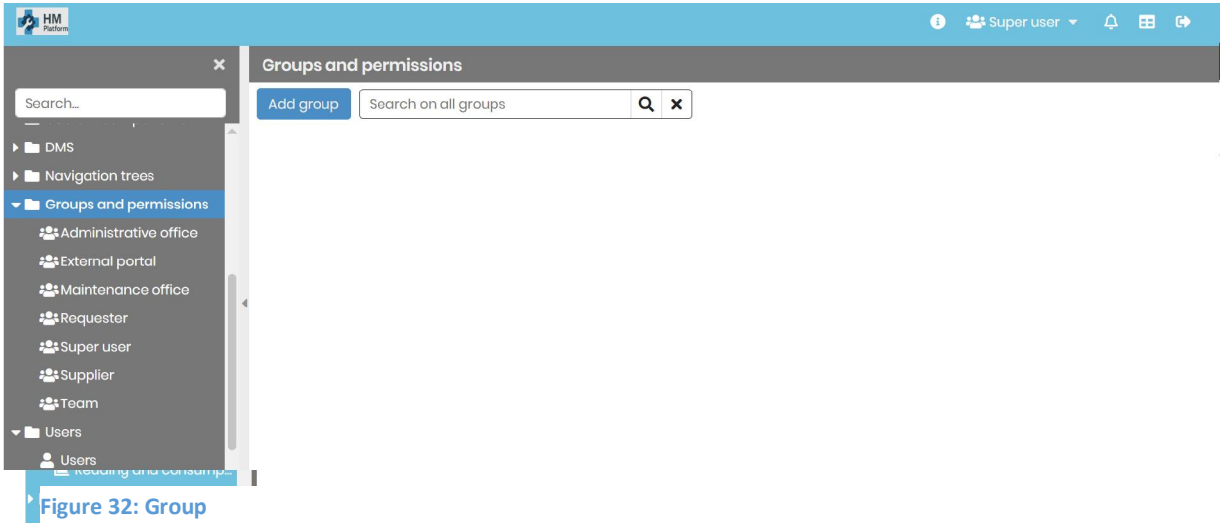


Figure 32: Group

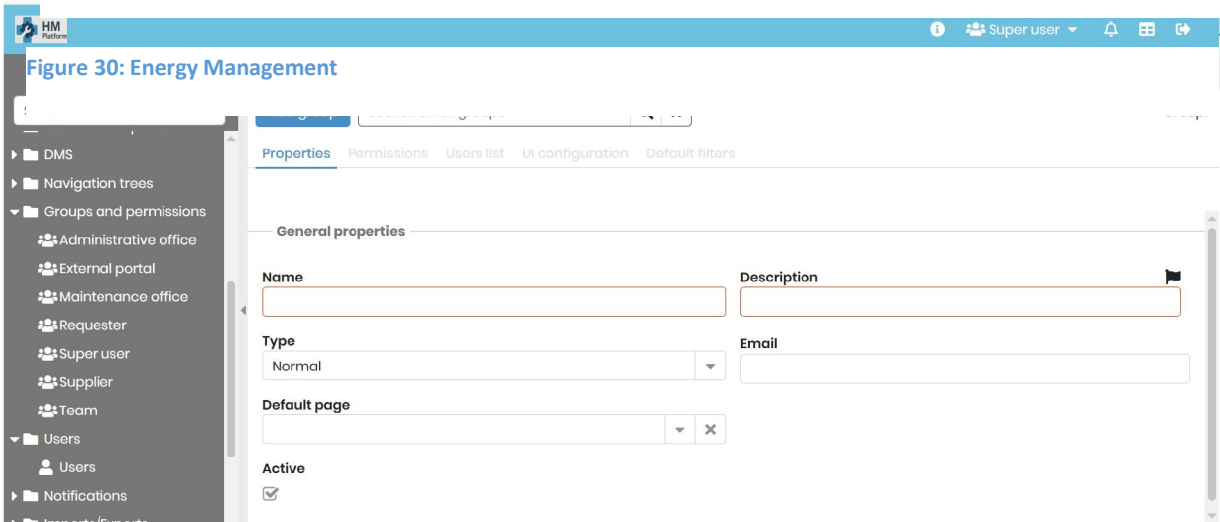


Figure 31: Add group

Established by us

The interface titled "Groups and Permissions" serves as a structural taxonomy, providing administrators and auditors with a hierarchical overview of predefined functional domains (e.g., Document Management System, External Portal) and role-based groups (e.g., Super User, Requester). Its primary aim is to visualize permission dependencies and module relationships, facilitating system comprehension and compliance verification for stakeholders such as IT managers, auditors, and

SIXTH AXE: PROTOTYPE

onboarding personnel. Conversely, the "Create New Group" interface functions as a granular configuration tool, enabling technical administrators and security officers to operationally define group properties—including permissions, user assignments, UI customizations, and default filters—through structured form fields.

Permissions:

This interface details granular permission settings for group administration. The "Add group" section includes search functionality and four configurable properties:

Permissions, Users list, UI configuration, and Default filters. Nine permission "Classes" (e.g., Processes, Dashboards, Reports) categorize system components. A central grid maps permissions for specific objects (e.g., Access control device, Asset) across five privilege levels: None, Read, Write, Filters, and Configure. All entries default to minimal access (None or Read), indicating an initial configuration state. The "Additional portal" list repeats entities from group.png (e.g., Supplier, Team), reinforcing integration between group assignment and portal access

SIXTH AXE: PROTOTYPE

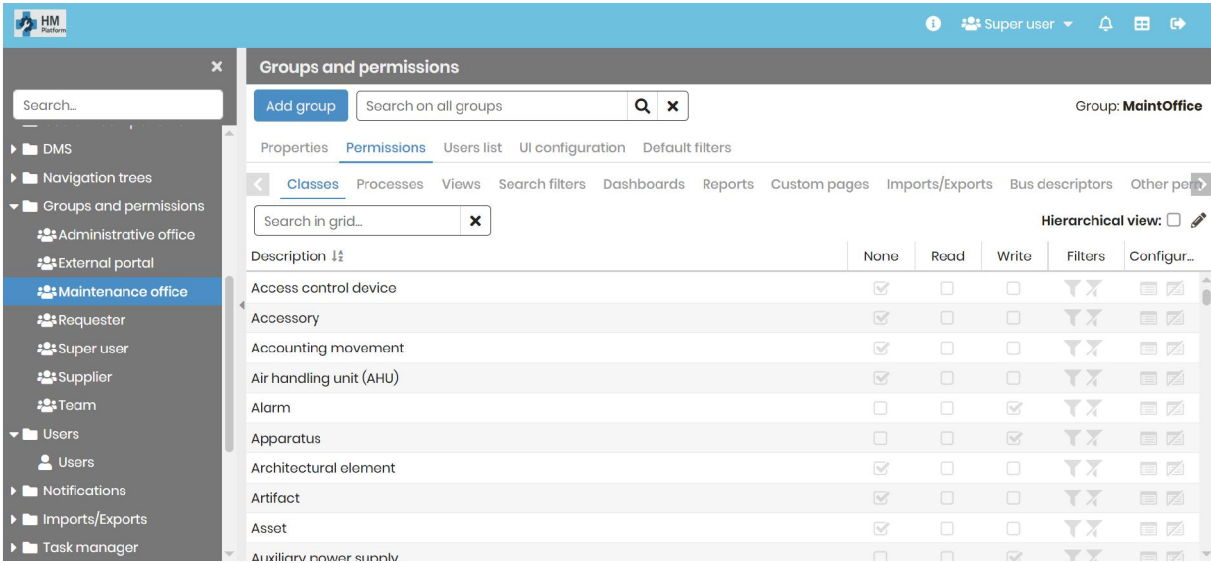


Figure 33: Permissions

Established by us

Report:

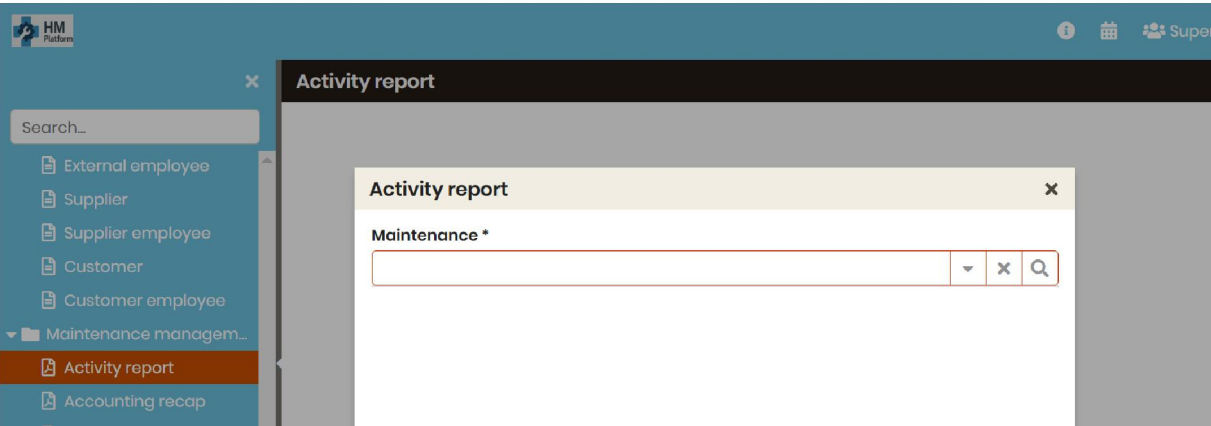


Figure 34: Report:

Established by us

The "Activity Report" interface within the HM Platform represents a structured digital environment designed to facilitate the documentation and management of maintenance-related operations. This interface centers around a required field labeled "Maintenance," which prompts users to identify or select a specific maintenance activity prior to generating a report. The presence of interactive

icons—including a dropdown selector, a reset (clear) function, and a search tool—indicates a user-oriented design that supports data accuracy and ease of access. By requiring users to explicitly link reports to maintenance tasks, the system enforces traceability and accountability, which are critical in professional maintenance management contexts.

"Activity report," this screen prompts the user to associate the report with a specific maintenance task, as indicated by the required field labeled

Create Users:

The user interface depicted is structured to facilitate the creation and management of individual user profiles within an enterprise information system. It includes essential input fields such as **Username**, **Email**, **Language**, and **Initial Page**, all of which are critical for identifying users and personalizing their experience within the system.

The interface also incorporates an **"Active" checkbox**, which provides administrators with a mechanism to enable or disable user accounts without permanently deleting them—an important feature for temporary access control. Additionally, the form supports the assignment of **services** to users, thereby linking them to specific roles or system functionalities. The password management section allows administrators to define or reset user credentials, ensuring security and compliance with authentication policies. Overall, this interface exemplifies standard practices in user account lifecycle management, emphasizing usability, administrative control, and security.

The screenshot shows a web application interface for creating a user. On the left is a sidebar menu with categories like 'Search filters', 'Dashboards', 'Reports', 'Menus', 'Custom pages', 'Custom components', 'DMS', 'Navigation trees', 'Groups and permissions', 'Users' (selected), 'Notifications', 'Imports/Exports', 'Task manager', and 'Plugin manager'. The main area is titled 'User -' and contains a 'General properties' section. This section includes fields for 'Username *', 'Email', 'Language' (a dropdown menu), 'Description', 'Initial page' (a dropdown menu with a close button), 'Service' (a checkbox), 'Active' (a checked checkbox), and 'Password' (with a 'Confirm Password' field). At the bottom right of the form are three buttons: 'Cancel', 'Save and add', and 'Save'.

Figure 35: Create Users:

our facebook page:

Established by us

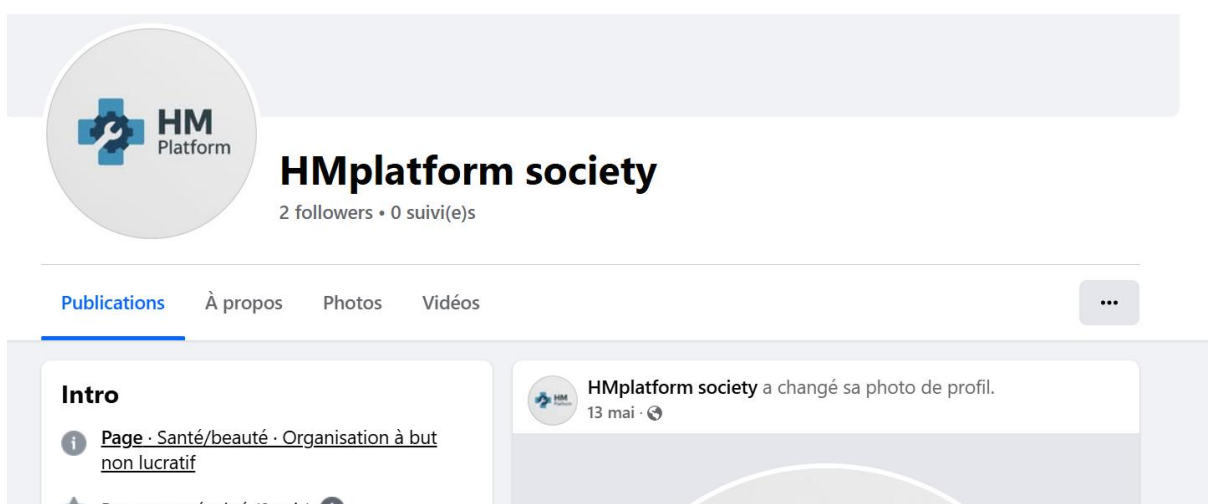


Figure 36: Facebook page

link: <https://www.facebook.com/profile.php?id=61576161904116>

Conclusion

CONCLUSION

Our journey in conceptualizing and developing this hospital maintenance platform has been an intense, demanding, and profoundly transformative experience. Throughout several months of continuous effort, we committed substantial time, intellectual resources, and technical expertise to give form to an innovative solution that addresses the specific and often complex challenges faced by modern healthcare facilities. Each milestone we achieved and every obstacle we encountered became a catalyst for learning, progress, and team synergy, contributing to the maturation of both the project and the individuals behind it.

The genesis of the platform lay in a comprehensive analysis of the limitations and inefficiencies inherent in traditional hospital maintenance systems. By conducting in-depth field research and engaging with professionals in the healthcare sector, we identified critical pain points and operational gaps. This foundational understanding enabled us to design a centralized, intelligent, and highly accessible digital platform aimed at improving equipment availability, optimizing response times, and reinforcing safety protocols for both patients and medical personnel.

The development phase was characterized by a spirit of collaboration and multidisciplinary engagement. Each team member played a vital role, bringing a unique set of technical, managerial, and communicative skills to the table. This collective effort allowed us to build a robust, intuitive, and scalable solution that incorporates a range of advanced features, including dynamic ticketing systems, preventive maintenance scheduling, data-driven reporting tools, and real-time monitoring dashboards—all designed to support hospital administrators in making informed, timely decisions.

Equally important was the implementation strategy, which placed the user experience at its core. We actively sought feedback from frontline healthcare workers, technicians, and facility managers to iteratively refine the platform and ensure its alignment with practical, day-to-day operational workflows. This responsive and adaptive approach not only improved the platform's usability but also fostered a strong sense of trust and engagement among early users.

Beyond the technical achievements, this project has underscored essential lessons in resilience, adaptability, and the value of continuous innovation in a rapidly evolving sector. It has highlighted how technology, when thoughtfully applied, can serve as a powerful enabler of organizational efficiency, patient safety, and service quality. We firmly believe that this platform will play a pivotal role in driving the digital transformation of hospital maintenance management, ultimately contributing to a more responsive, secure, and sustainable healthcare environment.

In conclusion, we would like to express our deepest gratitude to everyone who supported and contributed to this endeavor. Their unwavering guidance, constructive feedback, and technical insight were

CONCLUSION

instrumental in turning an ambitious vision into a tangible and impactful reality. We look forward to witnessing the continued growth and positive impact of our platform in healthcare institutions across the region and beyond.

List of References :

Cobrief. (2025, April 4). *Fees and charges: Overview, definition, and example*. Retrieved June 18, 2025, from <https://www.cobrief.app/resources/legal-glossary/fees-and-charges-overview-definition-and-example/>

DimoMaint. (n.d.). *Healthcare CMMS for biomedical maintenance management*. Retrieved June 18, 2025, from <https://www.dimomaint.com/industry/healthcare/>

DJIT Innovations. (n.d.). *DJIT GMAO – Gestion de maintenance assistée par ordinateur (CMMS)*. from <https://www.djitinnovations.dz/soft/djit-gmao/>

Guest Suite. (2025,January27). *Direct and indirect competitors: Definition*. Retrieved May,05,2025, from <https://www.guest-suite.com/blog/concurrent-direct-et-indirect-definition>

Marketpedia. (2021). *Competition*. From <https://marketpedia.ca/lexique/concurrence/>

SAP. (2025). *What is enterprise asset management (EAM)*. from : <https://www.sap.com/mena/products/scm/asset-management-eam/what-is-eam.html>

Sophie,D. (2023, February 6). *Business Model Canvas Explained: Definition, Pros, Cons, and Building Blocks*. *InvGate Blog*. Retrieved June 18, 2025, from <https://blog.invgate.com/business-model-canvas>

Vallespir ,B. (2012,June). *Le système de servuction*. *ResearchGate*., from https://www.researchgate.net/figure/Le-systeme-de-servuction_fig1_278797456

هل تواجه مؤسستكم تحديات في صيانة الأجهزة الطبية؟

لا

نعم

* ما نوع الصعوبات التي تواجهكم في صيانة الأجهزة الطبية؟

صعوبة في توفير قطع الغيار

نقص في التكوين المتخصص

غياب خدمات الصيانة المنتظمة

مشاكل في تحديث برامج الأجهزة

طول الوقت المستغرق لإتمام الصيانة

أخرى

(أخرى) يرجى التوضيح

*كم من الوقت يستغرق عادةً إصلاح الأعطال أو صيانة الأجهزة الطبية؟

أقل من يوم

من يوم إلى ثلاثة أيام

من ثلاثة أيام إلى أسبوع

أكثر من أسبوع

*هل طريقة الإبلاغ عن الأعطال الحالية في مؤسستكم تأخذ وقتًا طويلاً؟

نعم

لا

أحياناً

إذا كانت الإجابة "نعم"، يرجى توضيح السبب

*هل توجد منصة حالية للصيانة والتبليغ عن الأعطال تستخدمونها في مؤسستكم؟

نعم

لا

إذا كانت الإجابة "نعم"، يرجى تحديد اسم المنصة ووصف طريقة عملها

*هل تعتقدون أن وجود منصة إلكترونية للصيانة يمكن أن يساعد في حل هذه التحديات؟

نعم

لا

*ما المزايا التي ترون أنها ضرورية في منصة صيانة الأجهزة الطبية ؟

قاعدة بيانات لتصنيف الأجهزة ومتابعة حالتها

منصة لتبادل قطع الغيار

دورات تكوين عن بعد

منتدى لتبادل الخبرات والأفكار

نظام للإبلاغ عن الأعطاب والمخاطر

تقارير دورية حول حالة الصيانة والأجهزة

أخرى

(أخرى) (يرجى التوضيح)

*هل أنتم على استعداد لاستخدام منصة إلكترونية للصيانة إذا كانت متوفرة؟

نعم

لا

ربما

:ملاحظات إضافية أو اقتراحات

* هل يجب على المنصة إرسال تنبيهات تلقائية عند وصول مخزون قطع الغيار إلى مستوى حرج ؟

نعم، عبر البريد الإلكتروني فقط

، البريد الإلكتروني، والإشعارات الفورية (SMS) نعم، عبر الرسائل النصية القصيرة

لا، سيتم مراقبة إدارة المخزون يدويًا

Autre :

* ما هي الوسائل التي يجب استخدامها لإرسال تنبيهات الصيانة؟

البريد الإلكتروني فقط

التنبيهات اليدوية فقط

التنبيهات التلقائية عند الحاجة إلى الصيانة

مزيج من التنبيهات التلقائية واليدوية

* كيف يجب تكوين الأدوار والصلاحيات في المنصة

الفنيون: وصول فقط إلى المهام الموكلة إليهم

المديرون: وصول كامل، بما في ذلك إدارة المخزون

المديرون أو المسؤولون: تحكم كامل في المنصة وإعداداتها

تقسيم صارم للصلاحيات حسب الدور

* هل يجب على المنصة تضمين جداول زمنية للصيانة الدورية للأجهزة؟

نعم، للصيانة الوقائية فقط

نعم، لكل من الصيانة الوقائية والتدخلية

لا، سيتم إدارة الصيانة يدويًا

Autre :

* ما هي العوامل التي تؤثر بشكل أساسي على قرار تحديد تكلفة شراء المنصة؟

جودة المنصة ومصادقيتها

مستوى الدعم الفني والصيانة

سهولة الاستخدام والتكامل مع الأنظمة الأخرى

المزايا التقنية المتوفرة

(..التكاليف الاضافية (مثل: التدريب; التحديثات; الترخيص

Autre :

*كيف يجب أن يتم هيكلة نظام الدفع في المنصة؟

دفعه سنويه موحده لجميع الخدمات

دفعات شهرية تعتمد على التدخلات المنفذة

نظام دفع مختلط: رسوم ثابتة مع تكاليف متغيرة حسب التدخلات

(أخرى (يرجى التوضيح

(أخرى (يرجى التوضيح

*ماهي المهام الرئيسية التي تقوم بها في وظيفتك؟

الصيانة الوقائية

الصيانة التصحيحية

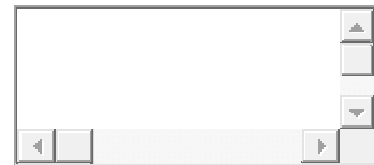
مراقبة وتسجيل بيانات الاداء

ادارة مخزون وقطع الغيارات

Autre :

*اسم المؤسسة

*الموقع الجغرافي



The Business Model Canvas					Designed for:	Designed by:	Date:	Version:
Key Partnerships 	Key Activities 	Value Propositions 	Customer Relationships 	Customer Segments 				
	Key Resources 		Channels 					
Cost Structure 			Revenue Streams 					

Annexe 2: business model canvas

Annexe 1: Survey on the Need for a Medical Equipment Maintenance Platform

Strategyzer. (2025, February 11). *The Business Model Canvas* [Web page]. Retrieved May21, 2025,

Key Partnerships 	Key Activities 	Value Propositions 	Customer Relationships 	Customer Segments 
- Ministry of Health - Health Directorate - Hospitals and healthcare institutions - Medical equipment suppliers and manufacturers - Cybersecurity units	- Development of a digital platform for maintenance tracking - Real-time data collection, monitoring, and reporting - User training and technical support Key Resources  Financial Resources: Internal: Own funds External: Business Angels, ASF, bank loans, FNI Material Resources: Computers/Server with large storage capacity/Office Intangible Resources: Application/Digital platform Human Resources: Manager/IT specialist/Secretary/ HR Director Finance Director	- Increased equipment reliability and reduced downtime - Real-time monitoring and automated preventive maintenance - Cost savings through optimized repair processes - Enhanced patient safety by ensuring proper functioning of medical equipment - Compliance with health and safety standards - Scalable and customizable platform for nationwide deployment	- Regular system updates and enhanced cybersecurity measures - Free initial training programs for hospital staff and technicians - Feedback mechanisms to support continuous platform improvement - Free trial period during the Channels  Digital platform Mobile application (as a long-term objective) Direct partnerships with hospitals Public procurement and government tenders Medical conferences, trade shows, and workshopine aiming and knowledge-sharing forums	B2G Public hospitals B2B Private medical clinics and diagnostic centers Manufacturers and distributors of medical devices
Cost Structure  - Development and maintenance of the platform - Cloud hosting and data security measures - Sponsorship and advertising - Research & Development (R&D) for continuous improvements - Legal and regulatory costs - Personnel costs			Revenue Streams  - Subscription fee for hospitals. - Customized platform deployment for large institutions - Government contracts and public health initiatives - Premium subscription service	

from <https://www.strategyzer.com/library/the-business-model-canvas>

Figure 37: BMC

List of Tables :

Tableau 1: team work.....	11
Tableau 2: objectives of the project.....	15
Tableau 1: SWOT analysis.....	Erreur ! Signet non défini.
Tableau 2: direct copetitors	45
Tableau 3: indirect competitors	45
Tableau 1: le bilan financier	102
Tableau 2: compte des resultats pour 5ans.....	103
Tableau 3:Amortization details	103
Tableau 4: revenue.....	104

List of Appendices:

Annexe 1: Survey on the Need for a Medical Equipment Maintenance Platform.....	132
Annexe 2: business model canvas	132

ملخص:

يَندرج هذا المشروع ضمن إطار المرسوم التنفيذي رقم 1275 المعدّل والمتمم بالمرسوم رقم 008، الذي يهدف إلى تحويل مشاريع التخرج إلى لتحسين صيانة HM Platform مشاريع مؤسسة ناشئة أو ذات طابع مبتكر. يتمحور هذا البحث حول تطوير منصة رقمية مبتكرة تُدعى الأجهزة الطبية داخل المستشفيات الجزائرية. تواجه هذه المؤسسات أعطالاً متكررة وغياباً لحلول رقمية فعالة، مما دفعنا إلى اقتراح منصة أظهرت نتائج دراسة ميدانية في 50 مستشفى الحاجة الملحة لهذه الأداة. تتيح إدارة مركزية، وتنبيهات تلقائية، ومتابعة في الوقت الحقيقي وتعتمد المنصة على تقنيات إنترنت الأشياء والذكاء الاصطناعي والحوسبة السحابية، مما يساهم في تقليل التكاليف، وتحسين موثوقية الأجهزة، ورفع جودة الخدمات الصحية، انسجاماً مع الاستراتيجية الوطنية لرقمنة قطاع الصحة.

résumé:

Ce projet s'inscrit dans le cadre du **décret exécutif n°1275**, modifié et complété par le **décret n°008**, visant à transformer les projets de fin d'études en projets de **startup** ou à caractère innovant. Ce travail porte sur le développement d'une plateforme numérique innovante appelée **HM Platform**, destinée à améliorer la **maintenance des équipements médicaux** dans les hôpitaux algériens. Ces établissements sont confrontés à des pannes fréquentes et à l'absence de solutions numériques efficaces, d'où la proposition d'une plateforme offrant **une gestion centralisée, des alertes automatiques et un suivi en temps réel**. Une étude de terrain menée dans 50 hôpitaux a révélé un **besoin urgent** pour un tel outil. La plateforme repose sur des technologies telles que **l'Internet des objets (IoT), l'intelligence artificielle (IA) et l'informatique en nuage**, contribuant à **réduire les coûts, améliorer la fiabilité des équipements et rehausser la qualité des services de santé**, en cohérence avec **la stratégie nationale de digitalisation du secteur de la santé**.

Abstract :

This project falls within the framework of **Executive Decree n° 1275**, as amended and supplemented by **Decree n°008**, which aims to transform final-year academic projects into **startups** or **innovative initiatives**. This research focuses on the development of an innovative digital platform called **HM Platform**, designed to improve the **maintenance of medical equipment** in Algerian hospitals. These institutions face frequent breakdowns and a lack of effective digital solutions, prompting the proposal of a platform that offers **centralized management, automatic alerts, and real-time monitoring**. A field study conducted in 50 hospitals revealed a **critical need** for such a tool. The platform leverages technologies such as the **Internet of Things (IoT), Artificial Intelligence (AI), and cloud computing**, helping to **reduce costs, enhance equipment reliability, and improve the quality of healthcare services**, in line with the **national strategy for health sector digitalization**.