



MY VACCINATION APPLICATION

ABSTRACT

In that report, the administrative and technical matters about creating an application called My Vaccination will be discussed. The main task will be about collecting children's data and informing parents about vaccination dates.

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1. Chapter:1 Introduction

Vaccination is essential in lowering child mortality; nevertheless, vaccination rates in many countries have dropped in recent years. Therefore, there is an increasing demand for apps that assist childhood vaccines in enhancing vaccination uptake, awareness, and decision-making. Getting health information has never been easier. But sometimes, it's hard to separate "good" and scientifically accurate information from "bad" news that isn't based on science. This is especially true of vaccines.

The main objective of this paper is a feasibility study and analysis for establishing an application for vaccinations in the Kingdom of Saudi Arabia. My vaccination application is an application that works on Android and IOS that will enable parents to know the times of their children's vaccinations and link the data in the hospitals of the Kingdom of Saudi Arabia to the application so that all data is credible in addition to the ease of the communication process.

1.1. Strategy

Our strategy will depend on setting goals and making them adaptable and executable. The faster we can identify incoming changes to project scope or schedule, the easier it will be to adjust project objectives promptly to increase efficiency.

1.1.1.Vision statement

Our vision is to be the best accurate, quick, and flexible mobile application for gathering, recording, and tracking children's vaccination data and to provide access

to this information in one click. We are doing our best to offer our clients the lowest possible prices, unlimited accessibility, and the best possible service.

1.1.2.Mission statement

We are working daily to make the "My vaccination" app the world's most valuable service in the public health field by bringing inspiration and innovation to every child vaccination record process to give customers the most accurate vaccination experience.

The primary mission can be defined as

- The great digital transformation and making business compatible and connected with the digital world
- Take advantage of the advantages of digital transformation and technology and digitize the vaccination of children
- Solve vaccination problems and remind parents of vaccination dates
- Reducing the rate of childhood illnesses

1.1.3.Objectives in a SMART model

Specific, measurable, attainable, relevant, and time-bound goals are known as SMART goals. Defining these factors about the organizational objective helps to guarantee that dreams may be fulfilled within the time frame specified. This method eliminates generalizations and assumptions, creates a clear timeframe, and makes it simple to evaluate progress and detect missed goals for My Vaccination. Knowing how to develop objectives using the SMART framework will help you achieve your goals, no matter how big or little. (Boogaard, 2021)

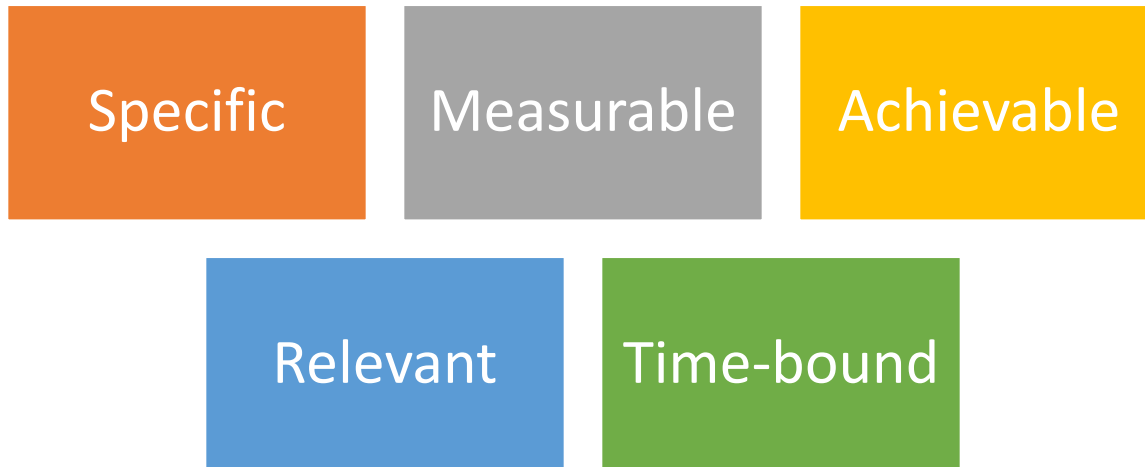


Figure 1.1: SMART objectives

” S” stands for Specific.

For the objectives to be clear, they must be specific and feasible. The goals of creating the My Vaccination application are:

- We need to develop an application to record and track the process of vaccinating children and keep records of all their related data.
- A well-trained team is responsible for this task.
- We need to set a budget, start working, evaluate our work, and apply feedback.

” M” stands for Measurable.

Quantifying goals makes tracking progress easier and knowing when the finish line is reached. So, we are working on creating a measurable way to achieve each step.

For example, we should decide:

- What is the cost of each step in creating my vaccination app?
- What is the expected ROI in both short-term and long-term?

“A” stands for Achievable

Goals should be realistic, and objectives should be reasonably accomplished, so we set a realistic budget that we can afford to launch my vaccination application and realistic goals such as:

- We are the only ones who provide this service in the Kingdom of Saudi Arabia by meeting all the requirements to maintain the health of our children.
- Incrementally provide accurate records and gain clients' trust within the next two years.
- Reach a million users of my vaccination application within three years.
- Obtaining high rates in the Google play store and as well positive reviews

” R” stands for Relevant

As we need to think about the big picture and why we are setting our goals, we should decide the outcome for each purpose and ensure that this goal is relevant to our overall plan of creating my vaccination application.

” T” stands for Time-bound.

We must make a decision: When will each goal be completed? When will the team begin generating and carrying out the tasks that have been assigned to them? When will they be over?

Goal / Time-bound	When the goal will be reached?	When the team start to implement their tasks?	When the team will finish?
Setting budget analyses	When the budget is estimated	Immediately	Within 3 months
Develop ROI model	When we can estimate the ROI in both long-run and short-run	Immediately	Within 6 months
Creating my vaccination application	When we acquire a flexible, well-designed and creative application	Immediately	Within 9 months
Experimental launch	When we gathering information and feedback about my vaccination application performance	After 9 months	Experimental launch will be 3 months

Permanent launch	When any errors are fixed, we can launch may vaccination application in a permanent way	After the experimental launch ends	After 1 year since the first step
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Table 1.1: SMART table

1.1.4. Performance measurement indicators, lead or lag.

Key Performance Indicators (KPIs) are values that assess an organization's progress in meeting its objectives. KPIs give information on company circumstances such as: (Twin, 2022)

- Predictability
- Benefits
- Design quality and more.

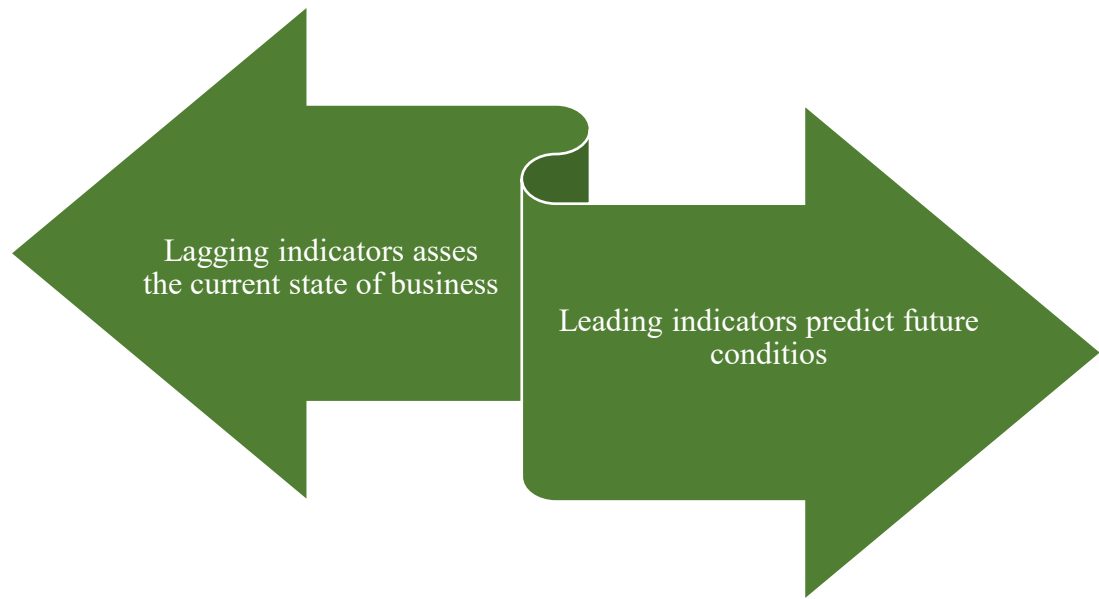


Figure 1.2: leading & lagging indicators

Leading indicator

Inputs are another term for leading indications. They specify the steps required to attain organic goals with quantifiable outcomes. They 'leading' to the effective attainment of overall corporate goals, thus the term 'leading.'

So, leading indicators can measure:

- How many people working in my vaccination application?
- How much progress was produced so far?
- What kind of feedback did it receive?

Lagging indicator

The lag indicator assesses current output and performance. The lagging indication is easy to measure but difficult to modify, whereas the leading indicator is dynamic

but difficult to monitor. Lagging indicators are used to forecast future success by measuring outputs that have already happened.

So, lagging indicators can measure:

- Profit expected form my vaccination app.
- Expenses estimation for creating such app.
- Customer participation
- Renewal rates
- Revenue

1.1.5.Project charter model

The project charter can be expressed as the formal permission to set up the project to define and understand the objectives of the project scope. Through it, the obligations, and roles of all participants in the project are defined. The project charter is an internal information-gathering document that gathers (deliverables, assumptions, and scope).



Figure 1.3: Project charter model

Project Name:	My vaccination application
Project date:	August -2022

1. PROJECT GOALS

The project's overall goal is to create a flexible, accurate, and easy-to-use mobile application that will track and notify parents of the new baby for vaccination doses until completion and link and share the data of the kid between the hospital and schools. And it keeps a record for any diseases, such as if the kid has chorionic diseases.

2. DELIVERABLES

Many necessary steps are needed to achieve a well-designed outcome and obtain highly effective results. These deliverables contain:

- Develop an accurate cost structure and ROI model
- Work on creating my vaccination application to provide the best possible service.
- Research in competitive applications to understand the advantages and disadvantages
- Provide a means to answer inquiries and solve any possible complaints
- Create a trusted tool to collect feedback and work on client's satisfaction

3. SCOPE DEFINITION

There are five key steps that are followed during the scope defining process in in developing my vaccination application

1. define the goals of the app: The main goal is helping children to take their vaccinations in time and in a safe manner.

2. identify potential issues or hurdles to overcome: Many issues could be faced during the project process such as
 - Technical issues in creating the application
 - Budget limitation
 - High competition in this field of business
3. decide which resources are needed to achieve the set goals: Many types of resources will be needed such as:
 - financial resources
 - human resources
 - Entrepreneurship
4. set up a milestone schedule. (Will be explained in the next step)

The project will include:

- Dynamic communication tool
- Accurate information provided
- Keeping record and respect client's privacy.

The project will not include:

- Information leak: such as the leak of information about children disease.
- System lags: such as slow applications
- Poor design

4. PROJECT MILESTONES

Milestones	Time frame
Setting budget analyses	Within 3 months
Develop ROI model	Within 6 months
Creating my vaccination application	Within 9 months
Experimental launch	Experimental launch will be 3 months
Permanent launch	After 1 year since the first step

5. ASSUMPTIONS & CONSTRAINTS

Many assumptions and constraints are built in order to face different scenarios

- What will be the reaction if we could not stick with timeframe?
- What will be the reaction if we face some budget limitations?
- What will be the reaction if my vaccination application did not work well?
- What will be the reaction if we technical problems?

6. PROJECT ORGANIZATIONAL STRUCTURE

Identify the team members by function, name and role.

Function	Name	Role
Project Owner	Mohammed Alanazi- _____	The Project Owner is the main owner of the project and is responsible for supervising the My Vaccination application from the beginning until its completion
Project Manager	-Mohammed barnawi-	The Project Manager is responsible for managing the project, overseeing critical and day-to-day operations, and ensuring that strategies are implemented on time and within budget.
Business Analyst	-Doaa-	The Business Analyst is responsible for analyzing the business across the project from the start

UI/UX Designer	Ahmed Al-Qadri	The UI/UX designer plays an important role in the development process of the My Vaccination application and will make the idea a reality.
Mobile App Developers	Abdularhman Kaka	The developer is the person who will work after the UI/UX designer to turn the layouts into a real application
CEO	Hatim	responsible for managing the overall operations of my vaccination application
Financials Manager	Sultan	Submit financial statements and interpret financial information to administrative staff with recommendations for financial measures so that we are on the right track
Quality manager	Yasser	Responsible for implementing and implementing inspection, testing and evaluation methods to ensure compliance The idea of My Vaccination application closely with company standards.

HR manager	-Fatoom	Supervise the hiring process in my vaccination application, from recruiting, interviewing, and hiring new staff
IT manager	-Talal	responsible for coordinating, planning, and leading computer-related activities in my vaccination application process.
Operation manager	-Mohammed alanazi	oversee operational activities at every level of an organization
Customer service manager	-Hatim--	ensures that the customers of a company are satisfied
7. PROJECT AUTHORIZATION		
Approved by:	Business Manager	Date August 2022

Table 1.2: Project charter model

1.2. Governance, Structure, and process

Any project's governance structure should be built on a few key concepts that are entirely relevant throughout the whole process, regardless of the project's stage.

The governance structure consists of

Logic - The framework in place must be reasonable and make sense to all involved.

Adequacy - there is no specific governance structure that works for everyone; This is something that should always be adjusted depending on the organization or project under consideration.

Transparency - All governance structure information must be transparent, intelligible, and accessible to all team members.

Reproducibility - The techniques and procedures used must be broad enough to be used repeatedly to any given circumstance.

Efficiency - the management structure should allow any project to run as smoothly and productively as possible; It must be solution oriented. (deloitte, 2022)

1.2.1.Organizational structure

It is essential to create an organizational structure for my vaccination application as it provides a system that outlines how certain activities are directed to achieve the goals of an organization. (Kenton, 2022)

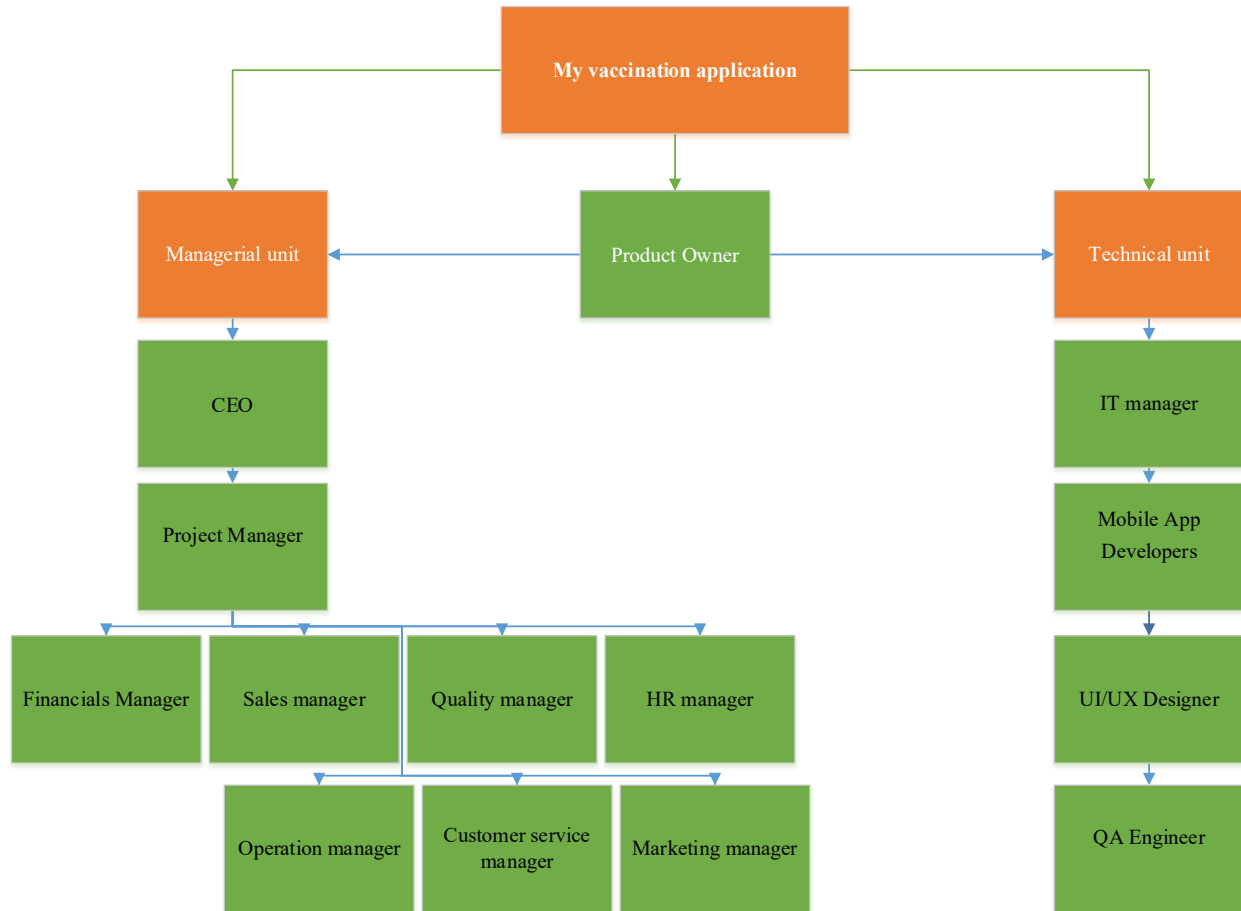


Figure 1.4: My vaccination application Organizational structure

1.2.2. Practical and scientific basis adopted in developing structure

The primary practical and scientific foundations to consider while creating an organizational structure for my vaccine application are as follows:

1. clarity

To maintain clarity within an organization, all members must comprehensively understand all elements of their employment. In other words, all participants and supervisors should know the employee's goals and the particular activities necessary to achieve those goals.

2. Understanding

Understanding is accomplished when all employees understand how they fit into the larger picture of the business.

3. Decentralization

All talks and decisions in a centralized organization occur solely among top-level management, with no input from lower-level workers. Conversations between individuals who conduct the day-to-day job of the firm are hampered by centralization.

4. Stability and adaptability

A well-structured organization monitors the environment for changes and intentionally adjusts to these changes. At the same time, the organization must be able to sustain stability in volatile situations. (Webster, 2019)

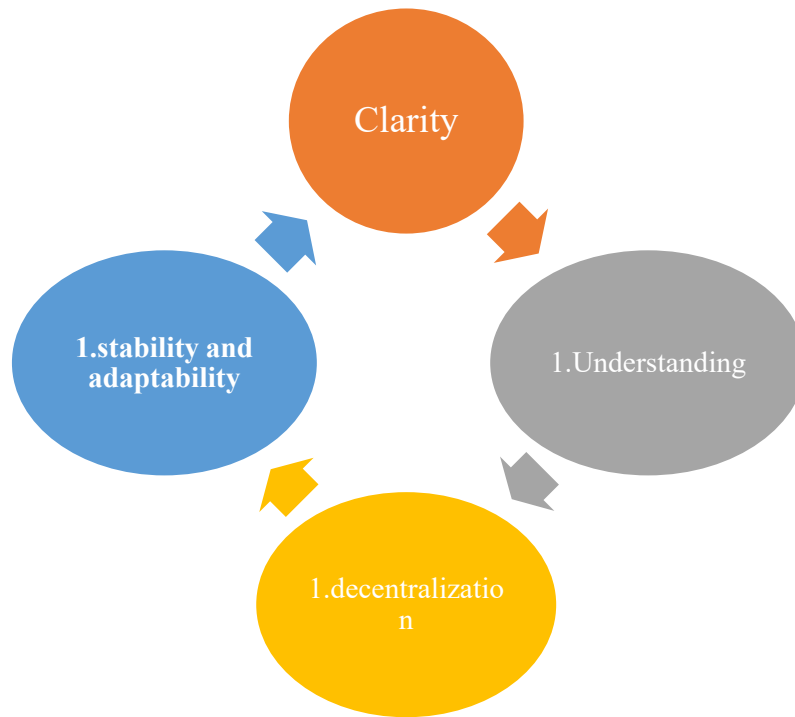


Figure 1.5 Practical and scientific basis adopted in developing my vaccinations app structure

1.2.3. Project's office model

In general, a PMO model is a sort of business-oriented organizational structure that helps an enterprise's business strategy and development.

There are several types of PMO organizational structures such as:

- Directive PMO
- Controlling PMO
- Supportive PMO

The most appropriate PMO to manage my vaccination application

- We believe that Controlling PMO will be the most appreciated model to manage my vaccination application.
- Because Controlling PMO ensures the availability of activity control.

- It involves information management to deliver input in decision making, including gathering and preparing.
- Controlling PMO helps provide information and suggest corrective measures.
- Also, controlling PMOs have a moderate level of control.
- They create documentation, methodologies, templates, and frameworks for project managers to follow
- Controlling PMOs ensure organizational standards for successful project management and execution. (António Monteiro et al, 2016)

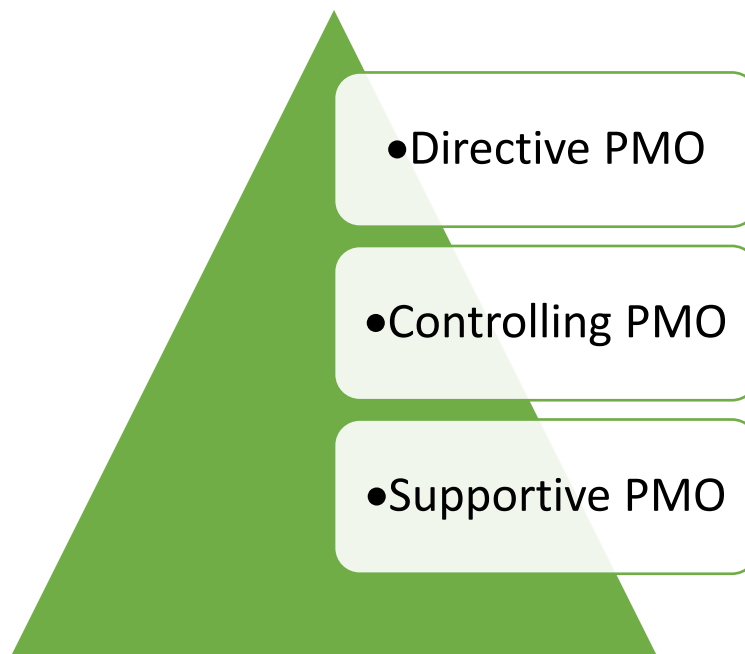


Figure 1.6- Project's office model

2. Chapter 2: Compliance, standards, and regulations

In this chapter, compliance with the laws and legislations that govern the mobile application industry will be discussed, in addition to the laws, legislation and policies that govern the Kingdom of Saudi Arabia that the application will be launched.

2.1. Compliance, standards, and regulations

The Saudi Food and Drug Authority (SFDA) began implementing reporting requirements for all drug-producing businesses in the Saudi market on January 7, 2019. More deadlines will be announced later this year. (tracelink, 2022)

2.1.1.A Check compliance model

A compliance check examines whether operations comply with regulations such as company guidelines and laws. The process can be viewed more as an audit task to ensure that it meets the required standards. To provide the best results and quality assurance, the team must clearly state all regulations and standards to avoid ambiguity. (Stephan Haarmann et al, 2021)

Applying compliance checking techniques in my vaccination application, will help us to verify process models against rules.

My vaccination application's check compliance model	
Compliance criteria	Description
Acceptance Compliance	Acceptance testing is a formal test based on user requirements and job processes. Determines if the program meets the stated and user criteria.

Operational Compliance	Operational testing is a software test to check the efficiency of the application before it is launched or put on the market.
Performance Compliance	Performance testing is a choice to evaluate the daily operations that will take place and their compliance with standards, policies, and legislation.
Information security Compliance	Monitoring and reviewing systems, devices, and networks to verify compliance with regulatory requirements, local industry standards, and cybersecurity.
Conformance Compliance	The goal of conformance testing is to discover how the system under test guarantees that the specific requirements of the Implementation and Child Service Standard are followed to limit the number of injuries and remind parents about vaccination appointments.
Quality Compliance	Quality compliance ensures that My Vaccination Application meets all the

	requirements and rules for which it was built
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Table 2.1: Compliance model

2.1.2. Check list model

It is a technique for recognizing possible errors and taking remedial action before serious issues arise. The checklist elements comprise questions and categories comparable to those used to collect information to identify significant project success indicators. (Alex Chaparro et al, 2019)

Check list model for My Vaccination application project's stages			
Project stage	Check points	Meet requirements?	
		Yes	No
Start	Define the project on a broad level	☒	☐
	Determine the need for the project	☒	☐
	Create a stakeholder register with the roles	☒	☐
	Create a project charter	☒	☐
Plan	Identifying technical requirements	☒	☐
	Developing a detailed project schedule	☐	☒
	Creating a communication plan	☒	☐

	Setting up goals/deliverables.	☒	☐
Achieve	Establish an efficient workflows monitor the progress of your team.	☒	☐
	Creating a way to monitor the progress of the team.	☐	☒
	Maintain effective collaboration between project stakeholders	☒	☐
	make sure that no one deviates from the original plan	☒	☐
Close	Indicates the end of the project after the final delivery.	☒	☐
	Completing the necessary and legal paperwork	☒	☐
	Hold a reflection meeting after the completion of the project	☐	☒

Table 2.2: Checklist model

2.2. Power and interest

Control, ownership, and interests will be with My Vaccination, a Saudi company owned by individuals.

2.2.1.Stakeholder register

My vaccination application's stakeholder register				
Project Name		My vaccination application		
Project Manager				
Date		August 2022		
Name	Role	Category	Group	Frequency to Communicate
—	Key Player	Internal	Owner	Daily
—	Meet their needs	External		Weekly
—	Key Player	Internal	Senior manageme nt team	Daily
—	Meet their needs	Internal	Team member	Weekly
—	Key Player	External	sponsor	Daily
—	Key Player	External	Creditor	Daily

—	Meet their needs	External	developer	Weekly
—	Key Player	Internal	Investor	Daily
	Meet their needs	Internal	project leader	Weekly

Table 2.3: Stakeholder register

2.2.2. The two network (strength/interest) and (influence/interest)

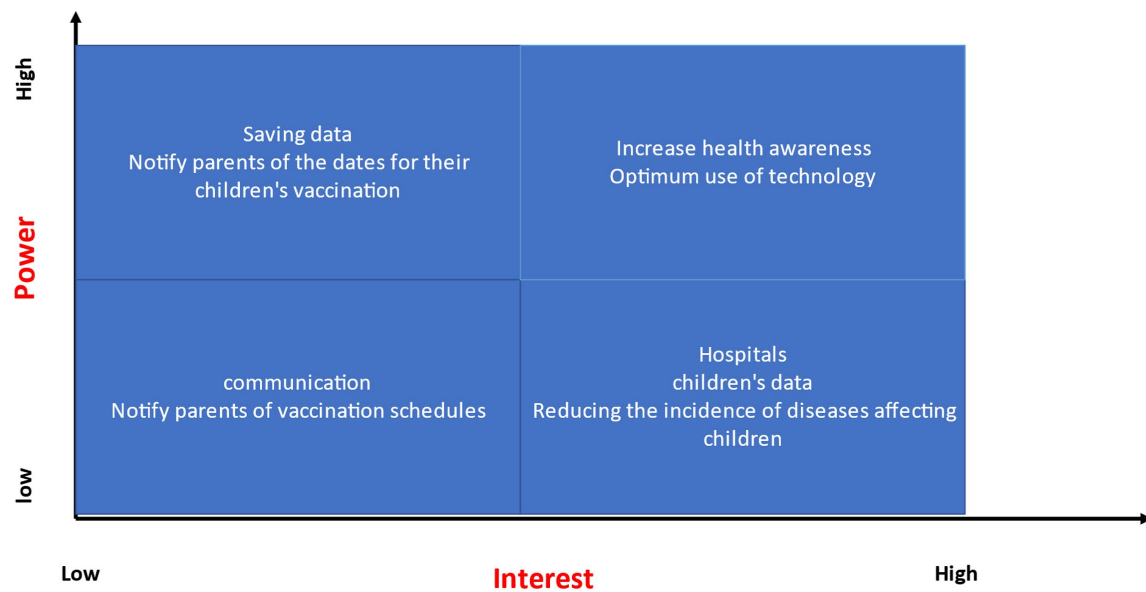


Figure 2.1: Two network

2.2.3.Using logical diagram for the register of the stakeholder

A stakeholder registry is vital for several crucial components of project management. One is to verify that the scope only contains the work packages required to complete the work needed to meet the project's objectives. Another issue is quality management and the intended application quality that satisfies the needs of the user and stakeholders.



Figure 2.2:Llogical diagram for the register of the stakeholder

2.3. Culture and values

Since the start of the Coronavirus crisis, governments have had to make swift judgments and undertake several unanticipated actions to safeguard vulnerable areas, particularly children with poor immunity.

The ongoing compliance and dedication to shared ideas, beliefs, and ethical standards in favor of the public interest and its importance above private interests in the public sector are referred to as public integrity. Integrity is a vital

organizational principle that fosters trust. According to the OECD Confidence Framework, the behavior of public institutions and the degree to which they can be trusted to safeguard the public interest plays a significant influence in influencing trust in them. (Figueiredo, 2020)

2.3.1.The culture of the organization

We have a unique organizational culture in the application of Vaccination, which is the inclusion of the other, the provision of humanitarian work for material gain, respect for the privacy of individuals and the protection of their information, providing the best possible service, and providing the flexibility and accuracy required to link records of newborns with hospitals as well as schools, to ensure the best possible health care is provided to these children.

We also respect all conditions about creating electronic applications within the Kingdom of Saudi Arabia, which are as follows:

The practitioner should clarify his place of work, as specified in the application.

It is required that the place be suitable for carrying out the work of the electronic application.

To clarify all the data related to the application, for example, the name and private means of communication.

Include the tax number, if any, with the addition of a unique number or any method of communication to address complaints or receive suggestions

Add that store as an electronic application in the commercial registry, and this is done by applying to the Saudi Ministry of Commerce.

2.3.2.Organization's values that can be adopted

Here at my vaccination application, we always seek development and values that help us keep improving and gain our client's trust.

Some of the values that we are working on:

1. **Teamwork:** When people work together, they can create something greater than themselves as individuals.
2. **Quality:** Companies are judged by the quality and efficiency of the application
3. **Accountability:** Accepting responsibility for officials' actions is the best way to build trust internally and externally.
4. **Diversity and inclusion:** The project idea will succeed because it aims to serve a lofty goal
5. **Quality:** - Through the quality of the application that we offer in the Kingdom of Saudi Arabia.

3. Chapter:3 Self-management

There are a lot of behaviors of the students involved in the implementation of this project, but to list the personal behaviors that can distinguish us to accomplish this project with high quality and in a short time.

3.1. Personal behavior

Knowing that we are a different group in thinking and each of us has his own thinking and beliefs, personal behavior will have an impact on the course and quality of the project.

3.1.1.Three personal behaviors

There are a lot of behaviors of the students involved in the implementation of this project, but to list the personal behaviors that can distinguish us to accomplish this project with high quality and in a short time.

Focus: Eliminate problems and focus on details

Operational Rhythm: Effective Organizing and Getting Things Done

Continuous Learning: Challenging assumptions, continuing education, and self-development to keep pace with technology and daily updates by striving to understand the lives of others. (gov1, 2017)

3.1.2.Eliminated behavior during project

When a project team aligns its behaviors with its duties, the time it takes to attain effectiveness and efficiency is considerably expedited, resulting in increased productivity and lower business costs. Problem-solving, decision-making, brainstorming, and communication processes become faster, more predictable, and permanent when behavioral interference is detected and eliminated. (Henkin, 2006)

3.1.3.Self-professional assessment using SWOT

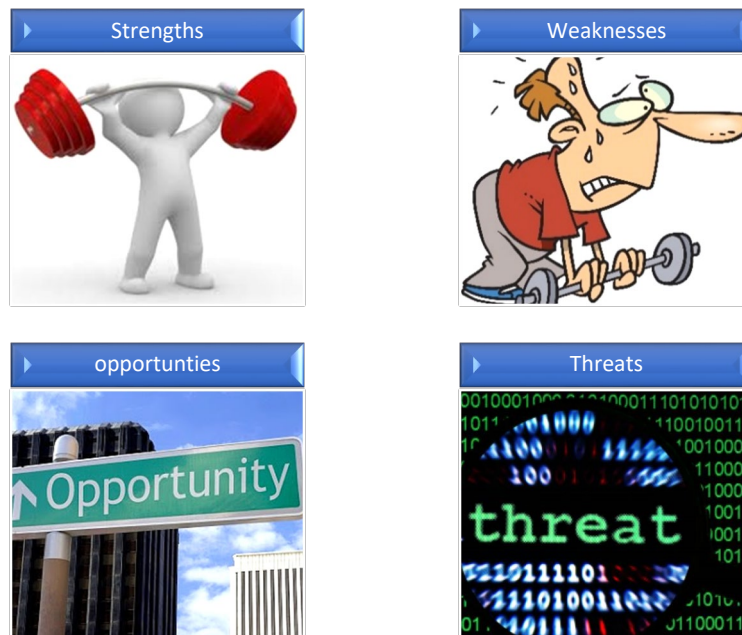


Figure 3.1: SWOT Self-professional assessment

Strength

We can start by assessing the internal factors that benefit the group during the business. These include relevant qualifications, skills, and abilities the group may have. In addition, formal education, relevant work experience, official certifications and recognitions, and any practical training you have received may also be added.

Weaknesses

The shortcomings of our group must be recognized and addressed. There are poor communication skills and poor time management. Limited knowledge, limited work experience, and limited experience in project management

Opportunities

Many external opportunities can affect the success of a project, such as external resources, Internet resources, artificial intelligence, data science, and easy access to information. Attending specialized training courses and the scope of professional transformations

Threats

There are some threats of conflicting ideas and the difficulty of obtaining some information and sources. There is also a threat in the implementation process of the high cost. (Pasteur, 2019)

3.2. Personal integrity and reliability

Delivering project advantages necessitates several human commitments to complete responsibilities. Our group must display personal integrity and dependability, as a lack of these attributes may result in the inability to achieve the

intended goals. Personal integrity means that individual acts by their moral and ethical values and principles. Reliability acts reliably, according to agreed expectations and behavior.

3.2.1.Behaviors that contradict moral integrity

Save the word

The word always expresses one's personality, so promises and appointments must be adhered to and not to procrastinate

Make fair decisions

Fair decisions must be made about anything to avoid the demand and disappointment of the team, and thus we will disrupt the course of the project

Non-judgmental practice

There is a fine difference between passing judgment in terms of good and evil, and distinguishing between what is wanted and what is not. Good decisions must be made about the behaviors associated with the situation. (Laabs, 2011)

3.2.2.Financial, social, technological influence on behaviors

While technology has given us greater control over our financial life — online shopping, online banking, mobile payments, and automated deposits — it has also altered our perceptions of and valuation of money.

Evidence is mounting that technology impacts financial decision-making, and when paired with deeply ingrained economic attitudes and behavioral biases, the results may be disastrous.

Some of the ways technology has a detrimental influence on financial decisions are as follows:

- Tribalism on social media: the attraction to the identification of the material aligned with the system of ideas and whims, which impacts economic thinking and behavior.
- Tips can be found on social media or through blogging.
- Furthermore, AI-based systems that propose "similar" things may encourage customers to purchase to obtain that instant satisfaction

3.3. Personal communication

Personal communications might take the form of private letters, notes, emails, interviews, or phone discussions.

3.3.1.Stakeholder register

The stakeholder register's goal is to chronicle persons affected by the project, as well as their effect and influence on the project. This document will be used for project planning, team creation, development, establishing success criteria, communication, governance, and outlining tasks and responsibilities. By

guaranteeing effective stakeholder engagement, a full stakeholder record generated early in the project and monitored throughout enhances the chance of project success. (uwaterloo, 2022)

Stakeholder Name	Category	Stakeholder Analysis Group	Address	Phone numbers	Email address	Communications sent to date	Comments and notes
CEO	Internal stakeholder	Key player	<u>Jeddah</u>	+96611111111	Ceo@vaccination.com	Phone call	Communicate to finish the project faster
Data entry specialist	Internal stakeholder	Key role	Jeddah	+9662222222	<u>Data@vaccination.com</u>	Mail	Communication about data entry quality
Hospitals	External stakeholder	Key player	Jeddah	+96633333333		Mail	Communicate with hospitals to store, import and export data
Designer	Internal stakeholder	Key role	Jeddah	+96444444444		Mail	Communicate via e-mail to improve the quality of application design
CFO	Internal stakeholder	Key player	Jeddah	+96655555555	Cfo@vaccination.com	Mail	Contact via email to review budget and expenditures

Table 3.1: Stakeholder register

3.3.2. Personal and interactive communication

According to the interactive communication model, communication is a process in which individuals interchange circumstances as sender and receiver and build meaning by sending messages and getting responses in physical and psychological contexts. The interactive model adds feedback rather than depicting

communication as a one-way linear process, making communication a more engaging two-way process. Comments are comments that are sent in reaction to other communications. A workplace coach, for example, may reply to a point you make during a session. Incorporating a feedback loop also results in a more sophisticated understanding of the responsibilities of the participants in a communication interaction. This paradigm features two recipients who exchange messages rather than one sender, one message, and one receiver.

To keep the dialogue flowing, each participant switches between roles as transmitter and receiver. Although this appears to be a deliberate act, we frequently flip between the roles of transmitter and receiver without conscious thinking. (Kapur, 2020)

3.3.3.Shapes, models, and channels of personal communication

There are several different types of communication channels that we can use to communicate between us as team members

- Face to face conversations
- video conferencing
- audio conferencing
- Email messages
- Written letters and notes
- Chats and messages
- Written official documents

3.3.4.Communication matrix

All intended touch points during the project are identified in the stakeholder communication matrix. This clarifies who should speak to whom, when, and why. When all stakeholders agree on what will be communicated and how frequently, the project will have significantly fewer issues than misconceptions.

Those working on a project can save time and money by avoiding duplication of communication efforts when there is clarity regarding who is accountable for the point of contact.

It demonstrates 100% who the stakeholder is expected to choose based on your success by setting clear expectations about who is responsible for what. This speeds up decision-making significantly. (swiftdigital, 2022)

COMMUNICATIONS MATRIX							
Project Name:		Vaccination application					
National Center:		Saudi Arabia					
Project Manager Name:		Mohammed barnawi.					
Project Description:		Create an application to keep records of vaccinations for children and link them to the data base in hospitals					
ID	Communication	Target Audience	Description/Purpose	Frequency	Owner	Distribution Vehicle	Internal / External
1	Weekly status report	Project Team	Communicate updated project status	Weekly	Ahmed	email	Internal
2	Daily phone Call	Project Team	Communicate updated project status	Daily	Mohammed	Phone call	Internal

3	Daily updates	Project Team	Regular communication	Daily		Phone call	Internal
4	Weekly status report	Designer	Communicate updated design status	Weekly		email	External
5	Weekly status report	Researcher	Communicate updated design status	Weekly		email	Internal

Table 3.2: COMMUNICATIONS MATRIX

3.3.5. Wrong scenarios of communication

- Not listening to co-workers is also a problem. It creates an ecosystem of disregard for personal feelings and devalues personal relationships in the workplace. For example, a team member expressed concern about creating a feasibility study. Still, an explanation of the problem was requested, but the interpretation was wrong, and then a meeting took place between team members to discuss the issue.
- There are lousy business communications when the hospitals we deal with do not have a mechanism to deal with special requests from us about data entry for children. Without communication from management to customer service staff about how to deal with such situations
- An e-mail communication occurred, and the problem was not explained in the best way holding the meeting was the best solution to deal with the situation.

3.3.6. Stakeholder assessment matrix

Stakeholder Name	Contact Person	Impact	Influence	Important to the stakeholder?	contributing	How could the stakeholder block the project?	Strategy
CEO	ceo@vaccination.com	High	High	Revising what done	Approval of updates and developments that have occurred so far	Going on strike	Monthly round-table discussions
Content writer	writer@vaccination.com	High	Medium	Maximizing quality of application	Communicate with other stakeholders to express their support for updates and developments	Submit complaints about matters that are not appropriate for the development of the project	Information and feedback meetings every week
CFO	cfo@vaccination.com	Low	High	Getting a good budget	Participate in budgeting, financial reporting and cost tracking	Track costs and approve future costs	Weekly updates

Table 3.3: Stakeholder assessment matrix

4. Chapter4: Leader in project management

The project manager examines the project's scope and whether it is on track to meet its purpose and vision. Although firms should aim for fresh and original ideas, if it does not connect with the company's objective, the project manager collaborates with business executives to either adjust the project's scope or cancel it before dedicating more resources to it. When project scope begins to deviate from the initial design, project managers can assist in reducing scope sprawl or creep.

4.1. Leadership

Possession of the soft skills of the project manager who adopts the leadership style towards investing the human element along with his functional specialization is an essential element in the compatibility between the project objectives and achieving the wishes of stakeholders, as well as customer satisfaction in the first place. From here emerge the leadership standards that give priority to the project manager in leadership The development of human resources and the realization of the aspirations of the workers, understanding of the fuel of the project based on successful leadership. (Kumar, 2009)

In our project, we will depend on the scope of project management, we will have a specific period of time to create the application, and there is a certain budget that we must not exceed, in addition to the quality of the final product.

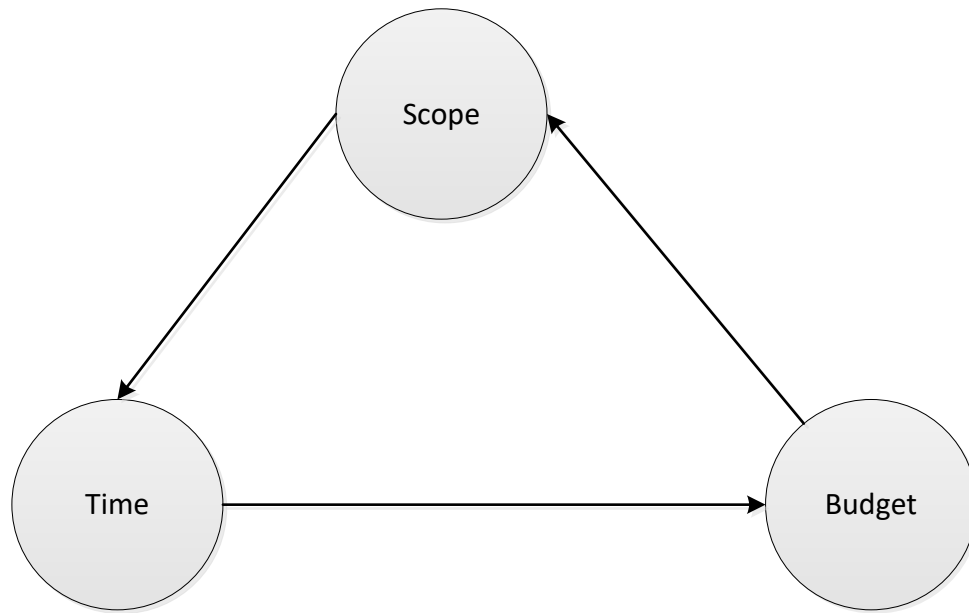


Figure 4.1: Project scope

4.1.1. Leadership model

Autocratic leadership, often known as "participatory leadership," is the opposite of democratic leadership. As a democratic leader, solicit your employees' thoughts and opinions, but the final decision will be yours. Collaboration and conversation may boost creativity and innovation. You may, however, feel challenged in circumstances where you must reconcile many different opinions and ideas. Because the project is collaborative and comprises more than one individual, a procedure must be followed to lead the democracy among us. (usa, 2021)

4.1.2.Democratic leadership reasons

- It helps in solving complex problems.
- It is a leadership style that anyone can practice in any industry.
- Democratic leaders receive a more diverse set of ideas and concepts.
- It enhances job satisfaction.
- It encourages honesty amongst workers.
- This leadership style connects people to their work.
- It enhances team knowledge.
- It encourages more substantial commitment levels.
- This style promotes the free flow of ideas.
- A leader who uses this style is considered more competent.
- This leadership style encourages trust and respect throughout the team.
- It takes an open and honest mind to be a using democratic leader.
- This leadership style allows a team to develop more strength. In addition, this style results in increased productivity.
- Robust connectivity between team members.
- It creates a connection between the manager and their subordinates.
- Democratic leaders emphasize values and morality.
- This leadership style can also create a robust vision for the future.
- It increases the amount of knowledge that is available to the team.
- There are multiple creative solutions. (Cherry, 2022)

4.1.3.Motivation proposals

- Instill a sense of ownership of the result. Depending on the team's contributions, encourage a winning position among the group. Providing the highest possible quality will increase the team's chances of winning; Make sure to reinforce this fact regularly.
- Building confidence is a terrific approach to utilize when working on something you don't want to work on. I make a contract with myself throughout the everyday duties that are not always the most enjoyable. I persuade myself that if I do this or that work, I will reward myself by doing something I like.
- In some respects, I can't entirely agree with this mind approach, yet "faking it till you make it" can help you get through certain difficult situations. Do it anyhow on days when you don't want to do something. Do it with a grin and your best effort. Sometimes faking it till you make it is all you can do. On days when I don't want to go to work, I urge myself, "Do it right now. You can do whatever you want. It will pay off in the long run." You are accurate thus far. This suggestion also applies on a smaller scale, such as preparing for a chore you may not love.
- Small goals are not worth documenting. I have a lot of goals. Set worthwhile objectives - plans that will not depress you but will drive you to work harder and improve. Set your objectives in front of you. Put a photo of your car, new house, or kids on your desk. Please make a list of your goals and hold yourself accountable to them.
- Begin with a task you don't particularly enjoy. Once you've accomplished your objective, you'll most likely have a more optimistic view for the remainder of the day. Don't be terrified of work that you can complete right now. Please don't put it off, or you'll never get it done.

- Get over your fear of failing. It is acceptable to fail frequently. Just make sure you fail ahead when you do. Stop considering failure to be a setback. Display them as notes. Analyze, attempt, fail, and then try again. Failure is an inevitable part of life. Agree to it . (Villa, 2019)

We always tell each other these motivations while working

4.2. Teamwork

We will work together to attain a common objective when we collaborate as a team. As a result, the foundation of collaboration is a shared aim. If each team member has a separate objective, teamwork will be tough, and producing great work and meeting goals will become extremely challenging.

When we collaborate as a team, we will work together to attain a common objective. As a result, the foundation of collaboration is a single aim. When each team member has a separate objective, teamwork becomes impossible, and producing excellent work and meeting goals becomes extremely tough. (Chestnut, 2020)

4.2.1.RACI model

After managing and saving hundreds of projects and assisting others, I've seen that there is always one crucial success aspect that has been appropriately handled or lost/tampered with: clarity regarding each participant's duties and responsibilities. essential parties and the project No matter how extensive and complete a project plan is for any project, misunderstanding or absence of participants' roles and duties will result in serious issues. (Kantor, 2018)

Task	Project manager	CEO	CFO
Feasibility study		R	
market analysis	A		
Estimated costs		A	I
app design	C		
Content writing			

Table 4.1: RACI Model

4.3. Conflict and crisis

Conflict occurs when two viewpoints, personalities, values, or opinions clash. This is a natural contradiction in some instances. Crisis management is the process through which an organization deals with a significant incident that threatens to harm the organization, its stakeholders, or the wider public. Conflict is a normal part of human nature, and it may be used constructively to improve individual performance. (Villax, 2010)

4.3.1. Identifying conflict and crisis

Conflict is damaging, and the project manager's primary priority should be to prevent the problem. A potential conflict must be identified early on and handled before it escalates and consumes a significant amount of time and resources.

Conflicts can take up a manager's time; hence, the project manager might profit from fostering an environment that promotes group cohesion and consensus.

Managers must create an environment that supports the employment of a collaborative approach to workplace dispute resolution. However, to better grasp the many consequences of conflict on individuals, it is necessary to explore the idea of conflict further and identify and comprehend its various causes. (Ohlendorf, 2001)

4.3.2. Conflict and crisis scenarios

- There was a struggle about prioritizing the project, and the team met more than once.
- A struggle over where to start, who chose to write the feasibility study first, and who chose to study the market, research and development first.
- Conflict over application design and chosen times

4.3.3. Resolving the conflict

- The conflict of project priorities was resolved through extensive research and meetings to reach a solution

- In a struggle where to start, the team was divided into two teams and each of them played a specific role.
- Then solve the application design conflict by creating a vote for stability on the design and colors

4.3.4.Root case analysis

ISSUE DETAILS		ISSUE TO REPORT		
DATE ISSUE REPORTED	ID / TITLE / NAME	DESCRIBE ISSUE	RATE HOW CRITICAL	
			<i>Rate how critical: Low, Medium, or High</i>	<i>Justification</i>
7/20/2022	PM	Application design problem	High	The problem was resolved by creating a vote among the team members to settle on the design

7/21/2022	Project team	Communication problem	High	Lots of communication channels have been offered to use
7/22/2022	Project team	market study	High	Lots of ideas were offered from the project manager to help us

Table 4.2: Root case analysis

5. Chapter 5: Resourcefulness in business

Broad-based resourcefulness is the capacity to locate and use existing resources to solve challenges and achieve goals in the corporate sector. It views obstacles as opportunities rather than problems to be solved.

5.1. Resourcefulness

delegating and improvising It is the ability to think differently, to produce new ideas, and to picture all conceivable outcomes. (Trenton Alma Williams et al, 2021)

5.1.1.Distribution of the human resources to the functions

It is critical to understand who is doing what and what is on the job to ensure the proper management and operation of my vaccine application.

An adequate understanding of human resources for employment is required for successful integration. The allocation of roles, responsibilities, and powers will allow our organization to run more effectively, generate higher-quality output, identify each employee's duties and degree of responsibility, and explain your position and responsibilities within the company.

Name of person in charge	Position	Duties/responsibilities
Mohammed Alanazi-	The Owner	The project financier is responsible for the final process
-Mohammed barnawi-	Project Manager	Responsible for project management
-Doaa-	Business Analyst	Business analysis and market study
Ahmed Al-Qadri	UI/UX Designer	Application development
Yasser	QA Engineer	Troubleshooting and troubleshooting
Abdularhman Kaka	Mobile Developer	Convert all UI/UX layouts into a real app
Hatim	CEO	Operations Management
Sultan	Financials Manager	providing financial statements
Yasser	Quality manager	Inspection, testing and evaluation to ensure compliance with standards
Fatoom	HR manager	Overseeing the recruitment process
Tlal	IT manager	To coordinate, plan and lead computer-related activities in the My vaccination application
Mohammed Alanazi	Operation manager	Oversight of operational activities
Hatim	Customer service manager	Ensures customer satisfaction

Table 5.1- Distribution of roles responsibilities and

5.1.2. Influence of conducting the crashing and fast-tracking process



Figure 5.1- Fast Tracking vs Crashing methods

Both the crashing and fast-tracking techniques can be used to shorten the project duration while maintaining the project scope. Both are considered to be schedule compression techniques. (Monnappa, 2022)

<i>Fast Tracking</i>	<i>Crashing</i>
Activities are performed in parallel	Sequence of activities is not changed
No additional resources are employed.	Additional resources are employed
Works with all activities in the	Works only for activities on the

schedule diagram	critical path
Works only if the activities can be overlapped	It does not matter if activities overlap or not
May result in rework and increased risk	May result in increased risk
Costs mostly remain the same if executed properly	Costs mostly increase as there is use of additional resources.

Table 5.2 - Comparison between Fast tracking and crashing

5.2. Negotiation process in the workplace

To make my vaccination application very popular among parents, hospitals, and schools, we should have persons with high negotiation skills who can make sales for our application, conduct our purchases to be at the lowest possible price and other fields which need a higher quality of negotiation skills. It is very critical to understand that an effective negotiation process offers a realistic and practical understanding of negotiation and the skills required to reach an agreement. (Fells, 2019)

5.2.1.General rules for the negotiation process

Here at my vaccination application, we are working hard to follow some negotiation rules which will lead us to achieve the best possible sales, purchases and provide a high-quality service to our clients.

Rule	Description
The background knowledge	Before any negotiation begins, understand the interests and positions of the other side, and an intelligent negotiator should also appreciate his company's interest.
Understand the person across the table.	Before influencing the person sitting opposite us, we must understand him. And know his interests and individual concerns?
Be prepared for tough questions.	Negotiator should be prepared for questions and issues that would put him on the defensive, make him feel uncomfortable, or expose his weaknesses.
Don't negotiate against yourself.	The negotiator should stay firm on his initial set of positions and explain his rationale but do not give in too early on the points.
Stay at the table.	Be willing to continue the conversation and encourage others to revisit issues left unaddressed or unresolved.

Table 5.3- General rules for the negotiation process

5.2.2.Two negotiation plans

We should create an effective negotiation plan through understanding the negotiation rules and phases.



Figure 5.2- The Five Phases of Negotiation

Negotiation plane 1

Organization: My vaccination application Date: 1 August 2022 Subject: Purchase company's equipment Vendor: XYZ company for office equipment	
Negotiation phase	Essential points
1- Investigation	We aim to buy a group of company's equipment for the best possible price and need high-quality equipment.
2- Determine BATNA	Full compilation of office furniture is equals to SAR15,000 as per general market indicators

3- Presentation	We will discuss all available materials aspects, prices, and also discussed some available sales discounts
4- Bargaining	We are willing to buy a group of company's equipment for SAR12,000, but XYZ company only accept SAR17,000 per 1 group of company's equipment
5- Closure	We agreed to SAR14,000 subscription for 1 person, and also agreed to future collaboration.

Table 5.4: Negotiation plane 1

Negotiation plane 2

Organization: My vaccination application August 2022 Subject: Sell My vaccination application group subscriptions XYZ hospital		Date: 10 Buyer:
Negotiation phase	Essential points	
1- Investigation	Our goal is to sell a group subscription for reasonable price in order to gain more clients in the future	
2- Determine BATNA	Subscription for 1 person is around SAR60 to 120 SAR which is renewed every year.	
3- Presentation	We will discuss all economic aspects, and how we can work on many joint interests	

4- Bargaining	We are willing to sell 1 subscription with SAR100, but XYZ hospital only offered SAR70 per 1 person.
5- Closure	We agreed to SAR80 subscription for 1 person and agreed to future collaboration.

Table 5.5: Negotiation plane 2

6. Chapter 6: Project design

Project design management entails allocating resources and encouraging cooperation among project participants to improve the effectiveness of design teams. (Robin, 2016)

6.1. Project design

In that chapter, the design of the project will be discussed in all its aspects, how it took us effort and time to implement it and what tools we used to complete the project.

6.1.1.The triple constraints of the project

The project management triple constraint has several names, including the project management triangle, the iron triangle, and the project triangle, which should indicate how significant it is when managing a project.

The triple constraint is a model of project management's intrinsic limits, and it consists of the following:

- **Cost**: A project's financial restrictions, often known as the project budget, price, and financial commitment, rely on various aspects. There are resources involved, ranging from materials to people, all of which incur expenses.
- **Scope**: The tasks necessary to achieve the project's objectives; the project scope refers to the project work required to accomplish the project. Managing such a task is crucial to the success of the project. When controlling scope, managers must prioritize activities and plan and distribute resources appropriately.
- **Time**: The project schedule is the expected time frame given to finish the project or create the final output. Typically, this is determined by first predicting how long each project activity will take.

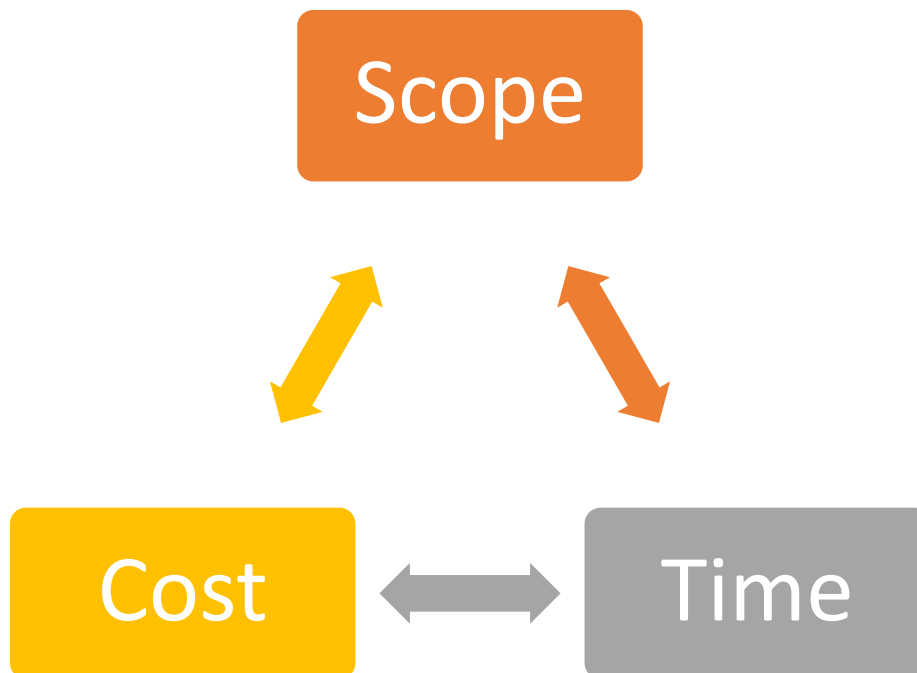


Figure 6.1- Triple constraints of project management

6.1.2.A list of the project success factors

Success factors are project components that must be implemented for the project to be completed. Simply put, they establish an enabling environment for the project to exist in the first place, with the project judged successful if it meets its objectives. (Brown, 2022)

And here are some main factors for successful projects:

1- Experienced Project Managers & Professional Project Team Leaders

The more experience a project manager has, the more equipped they are to deal with day-to-day project issues. Consider clearly defined roles and duties to minimize misunderstandings. Successful project managers are recognized for their technical understanding and leadership.

2- Proper Planning

Investing adequate time and money in thorough scheduling will result in high-quality performance, the avoidance of numerous difficulties, and the provision of a healthy work environment.

3- Monitoring & Control

Check in on progress and outcomes regularly. Identify key performance indicators (KPIs) and use reports to determine if a project is on track rapidly.

Managers will identify when things are going wrong and will be able to take corrective action before more damage is done.

4- Proper Risk Management

The project manager must make sure that all stakeholders are aware of the risk register and where to locate it. Even if something goes wrong, the team can tackle the situation effectively since they have a strategy. This instills confidence in the group when confronted with project hazards and makes clients feel comfortable as their project advances.

5- Open Communication

Many unfavorable project developments may be avoided or caught sooner with appropriate communication. Ensure that both formal and informal communication methods (meetings and papers) are adopted and utilized. Communication between team members is essential.

Implementing the principles mentioned above will result in a successful project and the development of positive relationships with clients and stakeholders. These criteria also assist project managers in avoiding issues that arise during the project development process.

6.1.3. Work breakdown structure (WBS)

WBS	Task Name	Duration	Start	Finish
1	My Vaccination Application	58 days	6/10/22	8/30/22
1.1	Market study	17 days	6/10/22	7/4/22
1.1.1	Online search	10 days	6/10/22	6/23/22
1.1.2	Read articles	5 days	6/20/22	6/24/22
1.1.3	Studying statistical figures about children and hospitals	8 days	6/23/22	7/4/22
1.2	Feasibility study	14 days	6/24/22	7/13/22
1.2.1	information collection	5 days	6/24/22	6/30/22
1.2.2	Divide the feasibility study among the team members	6 days	6/30/22	7/7/22
1.2.3	financial and technology analysis	10 days	6/30/22	7/13/22
1.3	Design stage	20 days	7/13/22	8/9/22
1.3.1	Hiring a programmer	6 days	7/13/22	7/20/22
1.3.2	Hiring a designer	4 days	7/20/22	7/25/22
1.3.3	Initial design study	15 days	7/20/22	8/9/22
1.4	Implementation phase	16 days	8/9/22	8/30/22
1.4.1	Implementation of application design	15 days	8/9/22	8/29/22
1.4.2	Review and examination	2 days	8/29/22	8/30/22
1.5	Launch	1 day	8/30/22	8/30/22

Table 6.1: WBS

In this project, the work plan was divided into four main stages.

The first stage, the Market study, lasted 17 days, as it started on 6/10/22 and ended on 7/4/22. At that stage, we will aim to study the market, collect a lot of information, and study the statistical conditions in the Kingdom of Saudi Arabia regarding the number of children, the number of hospitals, and the number of infected children who did not receive the vaccine.

The second phase, which is the Feasibility study, lasted 14 days, as it started on 6/24/22 and ended on 7/13/22. At that stage, we conducted a feasibility study, formed ideas, and converted them into an executable plan.

The third stage, the Design stage, which lasted for 20 days, started on 7/13/22 and ended on 9/22/08. At that stage, we contracted with a programmer and application developer to complete the implementation process in addition to studying the costs.

The fourth and final phase is the Implementation phase, which lasts 16 days, starting on 9/22/8 and ending on 8/30/22. At that stage, the ideas were implemented, and the plan turned into reality, and the application was launched.

6.2. Requirements and objectives for the project

Project objectives are the goals that must be met after the project. This can include physical goals like production and assets and intangible goals like greater productivity or inspiration.

Project requirements are a fundamental guiding concept of the project, yet many individuals disregard them in favor of the project team's judgment of what the user wants and needs. (Dawn Bassett et al, 2014)

6.2.1.Requirement traceability matrix

The requirement's tracking matrix is a table that contains all of the system's user and system needs. Assists in the traceability of requirements from the condition to test to verify that the state has been fulfilled, displays the link between requirements and other artifacts, and proves that requirements have been met. (Atan, 2013)

There are three types of requirement traceability matrix (RTM):

- forward traceability
- backward traceability
- bidirectional traceability

The test engineer will prepare the RTM for their respective modules and give them to the test leader. The test leader will go to the repository to see if the test case exists, and then the test leader will combine and produce one RTM document.

My Vaccination Application					
Saudi Arabia					
Ahmed					
<An application to remind parents about the dates of their children's vaccinations>					
<i>Technical Assumption(s) and/or Customer Need(s)</i>	<i>Functional Requirement</i>	<i>Status</i>	<i>Architectural/Design Document</i>	<i>Technical Specification</i>	<i>System Component(s)</i>
Children's data registration	Cells for data entry	In Progress	Application form	Architecture review	Form with all details
Notifications	Notifications of immunization appointments	Testing	Alarm	Architecture review	Alarm with vaccination date

Table 6.2: Requirement traceability matrix

6.2.2.Methods used in requirement collection

The process of establishing a list of requirements to describe a project and its purpose is known as requirements gathering. Requirements gathering is frequently used to create project designs. Bad conditions can be detrimental, while carefully chosen criteria can lead to success. (Malik, 2020)

Here at my vaccination application, we will be using the following methods for requirement collection:

Brainstorming

Brainstorming is used in requirements gathering to elicit as many ideas as possible from a group of individuals. It is commonly used to discover potential answers to issues and to describe possibilities.

Survey/Questionnaire

A survey or questionnaire can be used to acquire information from many people who are too many for an interview due to money and time restrictions. A survey might require users to select alternatives, rate something (accept or refuse), or ask open-ended questions that allow for free responses. Survey design is complex because questions might influence responses.

Observation

The analyst can discover process flow, steps, weaknesses, and chances for change by watching users. Feedback may be both passive and active (asking questions while observing). Active observation is more helpful in understanding the current business process than a passive word for gaining feedback on a prototype (to enhance requirements). Either method can be employed.

Focus Group

A focus group is a collection of people that represent product users or consumers and gather feedback. Feedback on needs/opportunities/problems can be acquired to identify requirements or to validate and enhance conditions that have previously been obtained. Market research differs from brainstorming because it is a controlled procedure with particular participants.

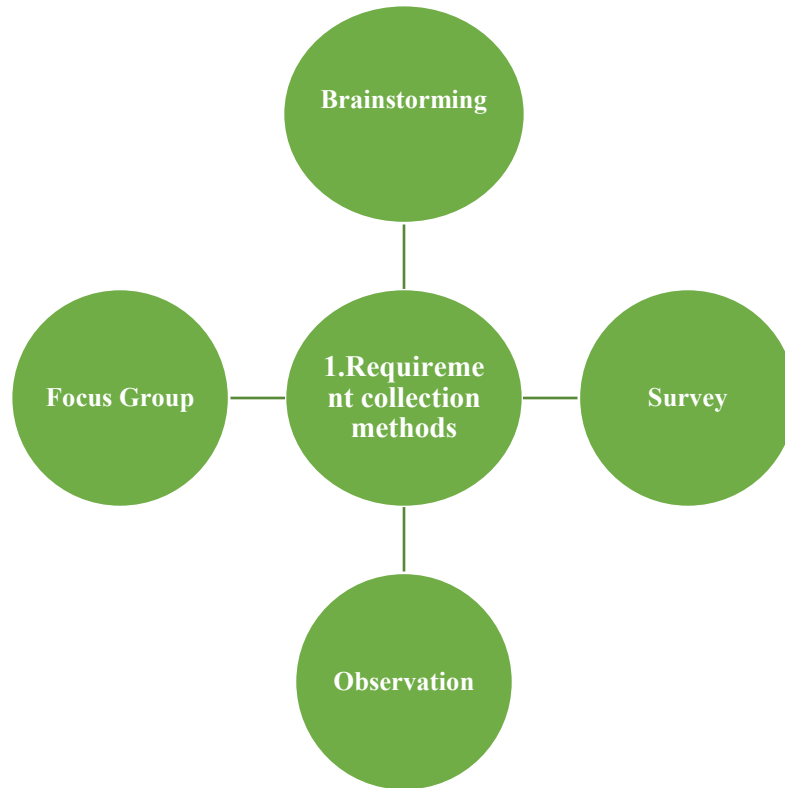


Figure 6.2- My vaccination application's methods used in requirement collection

6.2.3.Hierarchical structure of the objectives of the project

Early in the life cycle, clear and concise hierarchical goals are crucial to project success because they assist project stakeholders in developing:

A shared knowledge of what the initiative is attempting to accomplish

Commitment to the same aims

The objectives hierarchy is a method for examining and expressing project goals.

Objective hierarchy arranges project objectives into multiple levels of a hierarchy

or tree. Different organizations call the various groups and plans at each level other names. Otherwise, there is a lot of overlap in the method.

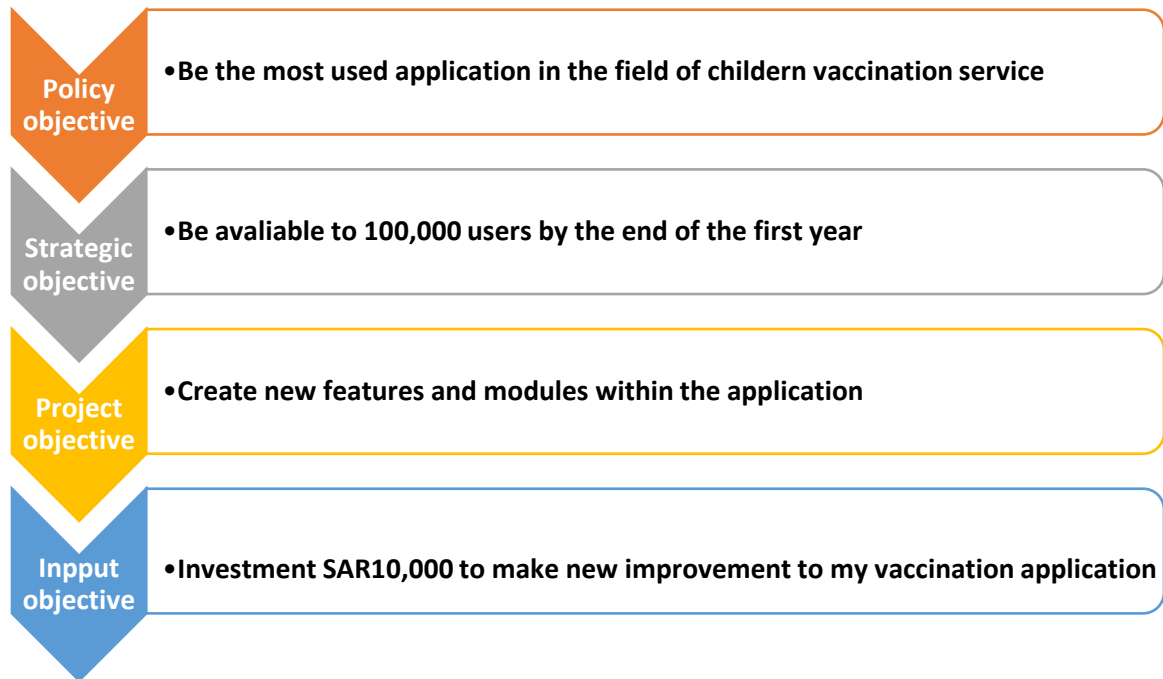


Figure 6.3- Hierarchical structure for the objective of my vaccination application

7. Chapter 7: Project scope, time, and quality

Defining a project scope is defining and preparing a project for implementation. It aids in the decision to proceed with the project.

7.1. Scope

In the early phases of a project's life cycle, an incomplete scope definition is a typical source of trouble in the construction project development process. (Aibinu, 2013)

7.1.1.Scope statement

A scope statement is a document that specifies the whole scope of a project, including assumptions, project requirements, and acceptance criteria. Your project scope statement will be a valuable resource for stakeholders and team members to refer to and use as a guide to gauge project success appropriately.

The project scope statement is part of the scope management plan, which is a broader document that contains all project's strategies, regulations, and processes. Similarly, a scope management strategy is an essential component of your project plan.

Project scope statement	
Project name: My vaccination application	Project manager:
Date of project approved: August 2022	
Scope description	• Making a mobile application called my vaccination application to support the vaccination process for children in Saudi Arabia and worldwide. • In scope: linking parents, schools, and hospitals to manage newborn children's vaccination process. • Out of scope: support outside of the vaccination process.
Project deliverables	• My vaccination application that can be accessed online • Clients use My vaccination application to get accurate vaccination records. • Application utilization training
Acceptance criteria	Projects can be considered acceptable if the application can meet the needs of clients, Scholls, and hospitals.

Constraints	The process of training and assistance for the use of the application is 1 month only.
Assumptions	Project teams and users can continue to use some services of my vaccination application even though it is offline

Table 7.1- My vaccination application scope statement

7.1.2.Scope creeping

Scope creep one of the most prevalent reasons for software project failures. It may occur in almost every software project, resulting in quality compromise, delayed timelines, increased costs, and lower client satisfaction. However, due to a lack of empirical data, a detailed analysis is required to identify the scope creep determinants and to propose a conceptual framework for experimentally measuring the influence of scope creep on the success of a software project.

Scope creeping can cause project failure.

Every year, around 50-60% of software initiatives fail entirely or partially.

According to other sources, the failure rate is much greater. 70% of firms suffered software failure, according to the 2018 Project Success Report.

According to 2017 project management data, the proportion of complex projects has risen to 43%. As a result, they are over budget, delayed, or lack functionality or features. Numerous studies have identified several variables that contributed to the

project's failure, but scale creep has been recognized as one of the most common. Scope creep "any change in project scope or demand from customers and suppliers to provide more than initially agreed." Domain creep, according to the definition, must be appropriately managed. (Bakhtawar Komal et al, 2020)

7.1.3.Product analyzes management

Product analysis is a fundamental project management process that is required for all projects. It can take many forms, but it typically includes asking questions about a product and developing responses. Experts can refer to those who analyze a consequence, members of the general public, or prospective customers/groups of people. Product analysis may be carried out at any point in the design process. Product analysis is a technique for determining the scope of a product or service. This implies that while examining an effect based on its scope, queries concerning it may be posed.

Examples for these questions are:

- What problem are we facing?
- How can we solve it?
- What are the right components?
- Can we solve this issue?

7.2. Project time

Project time management is the activity of planning, scheduling, and exerting deliberate control over the limited amount of time spent on specific project tasks to

increase their effectiveness, efficiency, or productivity. Initially, time management was not considered a responsibility that extended beyond commercial or professional activities, but the phrase has since been expanded to cover personal interests. Today's project time management solutions are a mash-up of procedures, tools, approaches, and strategies.

Time management is essential in every development project since it affects the project's duration and scope. Time management is vital in management because time is a precious resource; time, once spent or incurred, cannot be saved; if it is not utilized, it is lost permanently; and lastly, management goals cannot be reached without the application of effort, which necessitates the use of time. (Oburu, 2020)

7.2.1. The activities (functions list) included in each work package in WBS

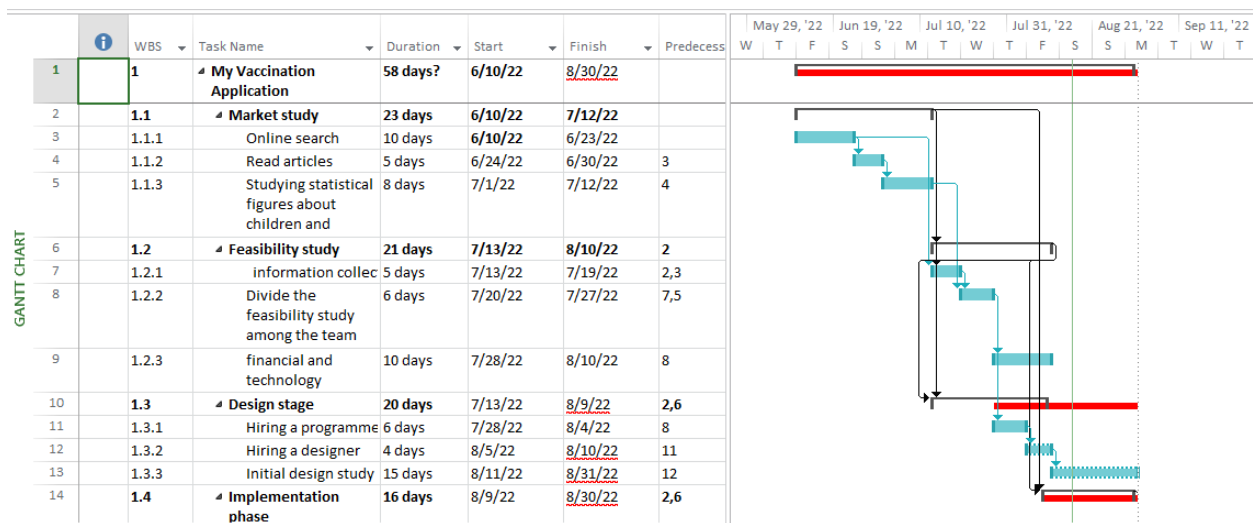


Figure 7.1: Project activities

7.2.2.Relationships between the activities

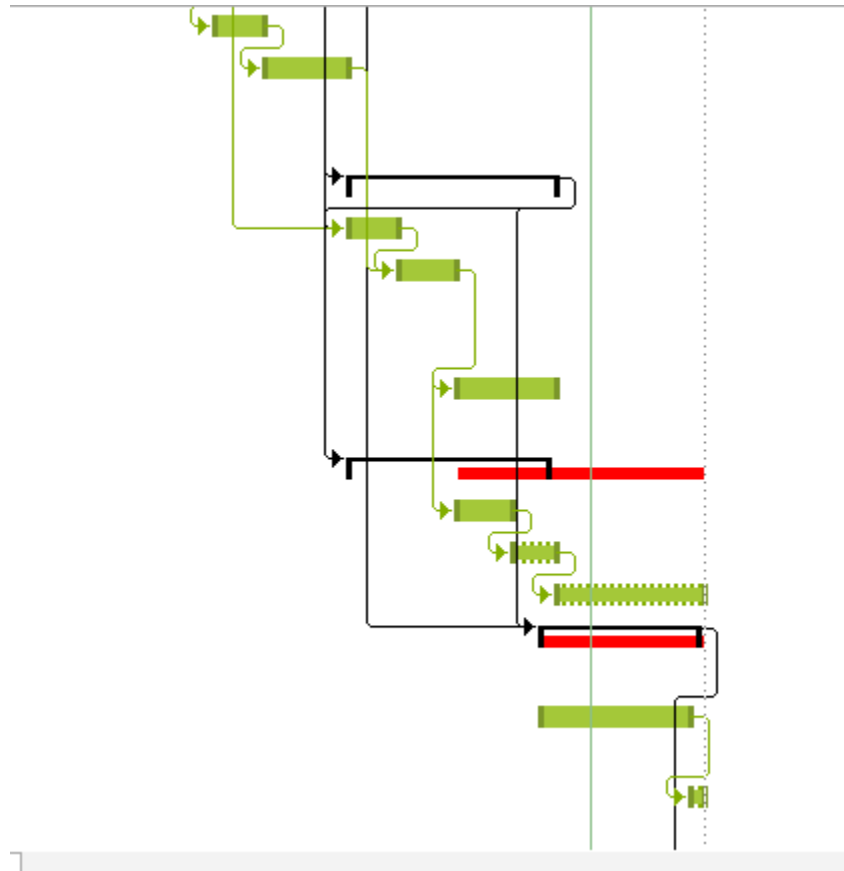
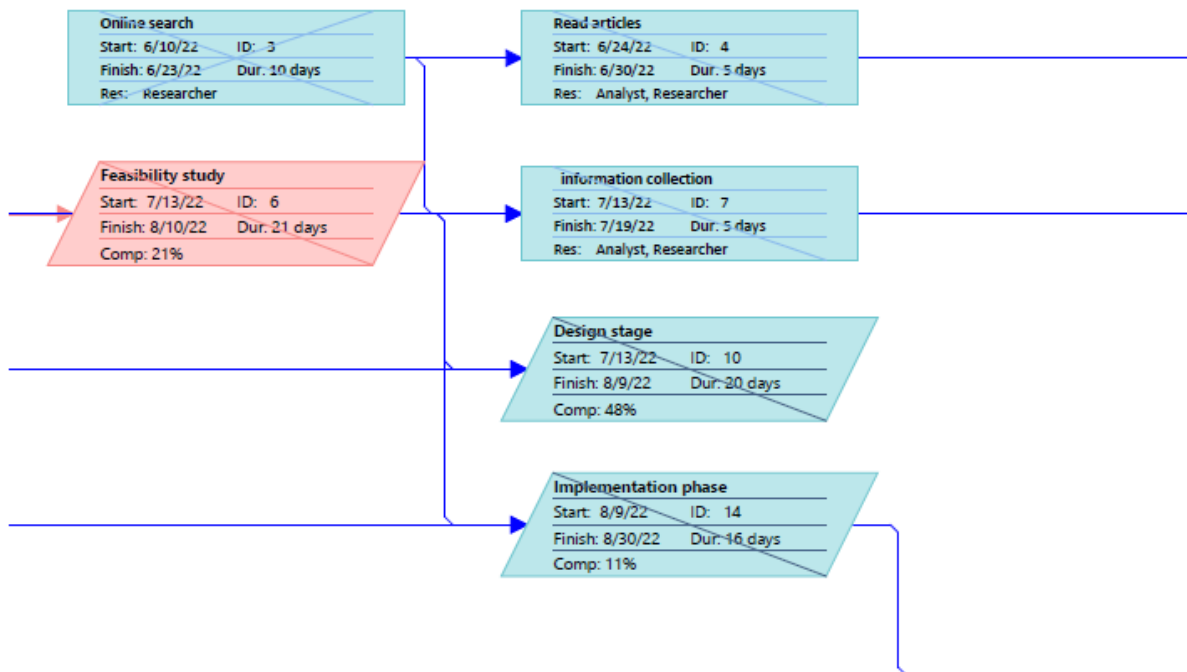
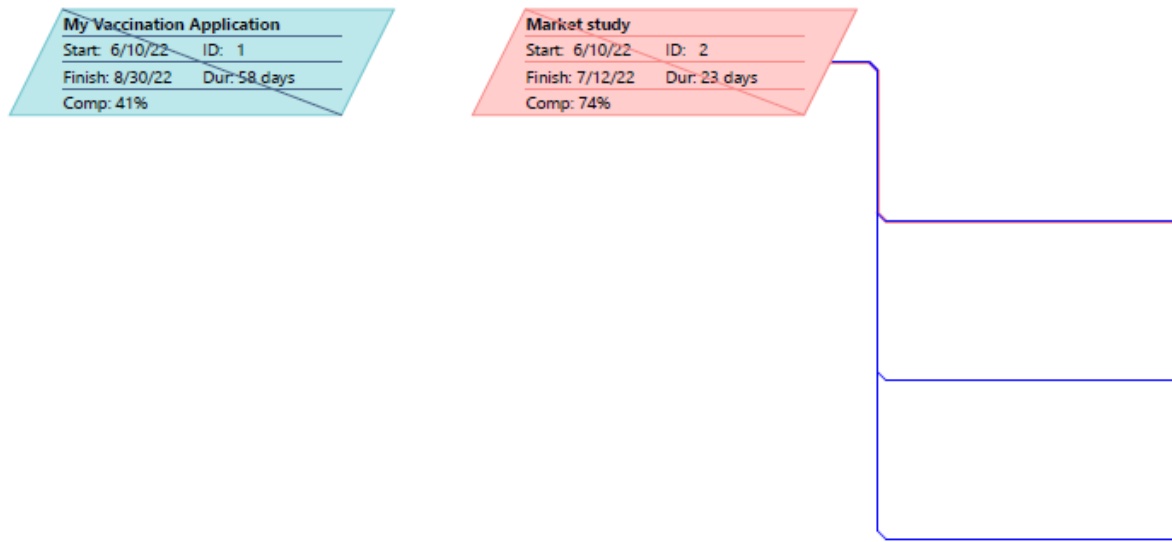


Figure 7.2: Relationships between the activities

7.2.3.Logical diagram of the activities and the critical path



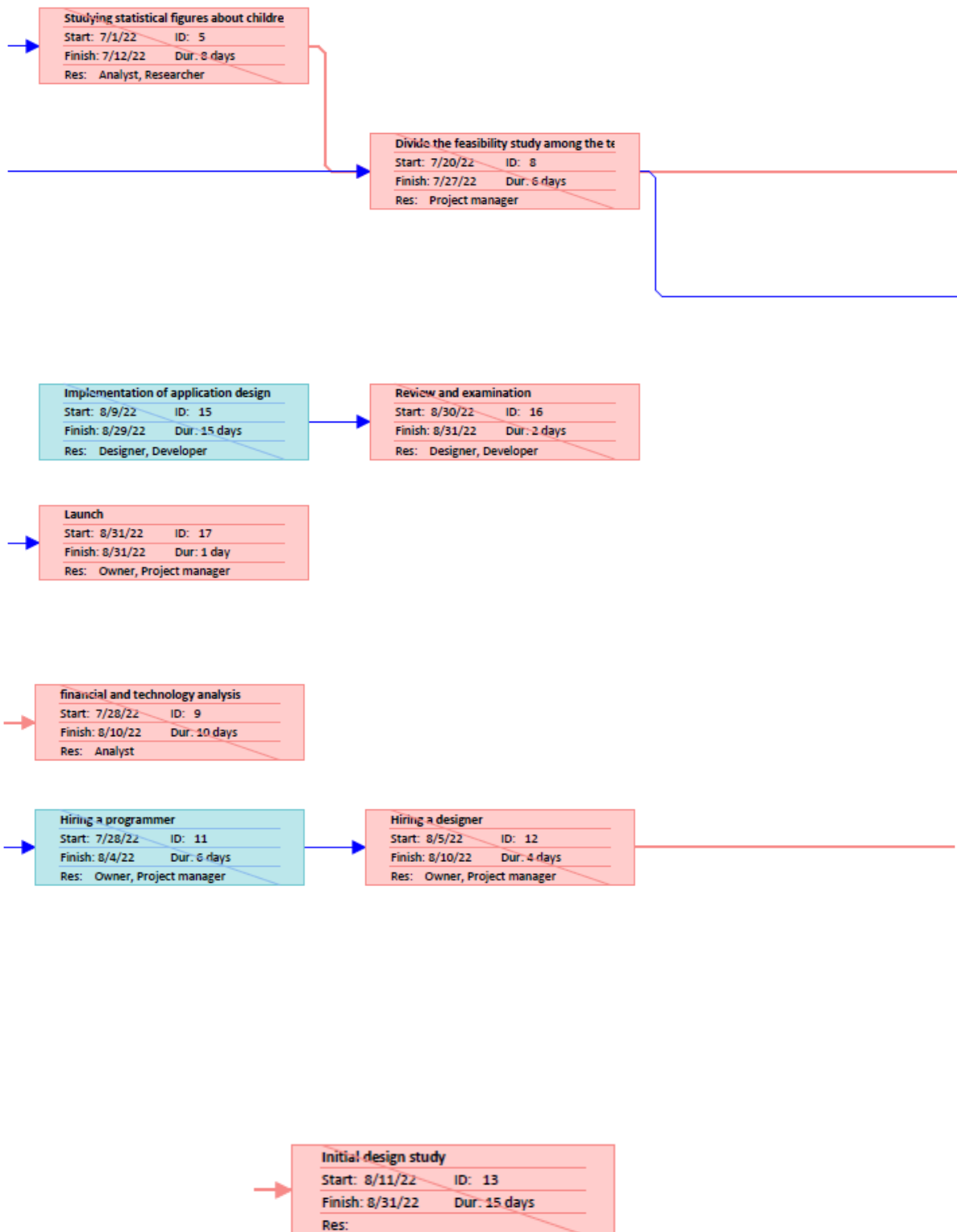


Figure 7.3: Critical path and network diagram

ID	WBS	Task Name	Duration	Start	Finish	Predecessor	Resource Names	% Complete	Cost	F
1	1	My Vaccination Application	58 days	6/10/22	8/30/22		Owner,Project manager	41%	\$6,400.00	
2	1.1	Market study	23 days	6/10/22	7/12/22			74%	\$0.00	
3	1.1.1	Online search	10 days	6/10/22	6/23/22		Researcher	100%	\$0.00	
4	1.1.2	Read articles	5 days	6/24/22	6/30/22	3	Analyst,Researcher	45%	\$0.00	
5	1.1.3	Studying statistical figures about	8 days	7/1/22	7/12/22	4	Analyst,Researcher	60%	\$0.00	
6	1.2	Feasibility study	21 days	7/13/22	8/10/22	2		21%	\$150.00	
7	1.2.1	information collection	5 days	7/13/22	7/19/22	2,3	Analyst,Researcher	15%	\$0.00	
8	1.2.2	Divide the feasibility study among the	6 days	7/20/22	7/27/22	7,5	Project manager	20%	\$0.00	
9	1.2.3	financial and technology	10 days	7/28/22	8/10/22	8	Analyst	25%	\$150.00	
10	1.3	Design stage	20 days	7/13/22	8/9/22	2,6		48%	\$5,500.00	
11	1.3.1	Hiring a programmer	6 days	7/28/22	8/4/22	8	Owner,Project manager	35%	\$2,500.00	
12	1.3.2	Hiring a designer	4 days	8/5/22	8/10/22	11	Owner,Project manager	40%	\$3,000.00	
13	1.3.3	Initial design study	15 days	8/11/22	8/31/22	12		55%	\$0.00	
14	1.4	Implementation phase	16 days	8/9/22	8/30/22	2,6		11%	\$750.00	
15	1.4.1	Implementation of application	15 days	8/9/22	8/29/22		Designer,Developer	10%	\$500.00	
16	1.4.2	Review and examination	2 days	8/30/22	8/31/22	15	Designer,Developer	20%	\$250.00	

Project: msproj11

Date: 8/16/22

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Deadline

Progress

Manual Progress

Page 1

ID	WBS	Task Name	Duration	Start	Finish	Predecessor	Resource Names	% Complete	Cost	F
17	1.5	Launch	1 day	8/31/22	8/31/22	14	Owner, Project m	0%	\$0.00	F

Project: msproj11

Date: 8/16/22

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

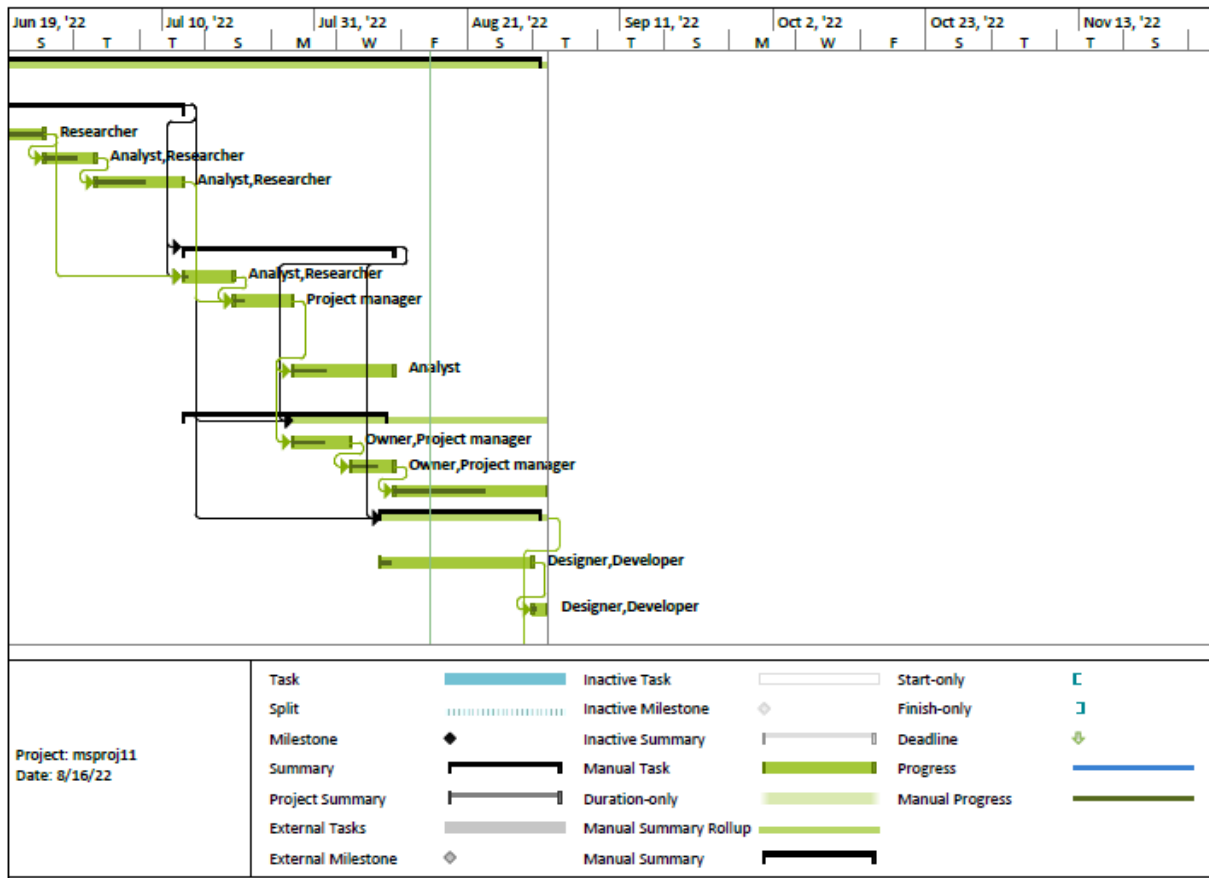
Start-only

Finish-only

Deadline

Progress

Manual Progress



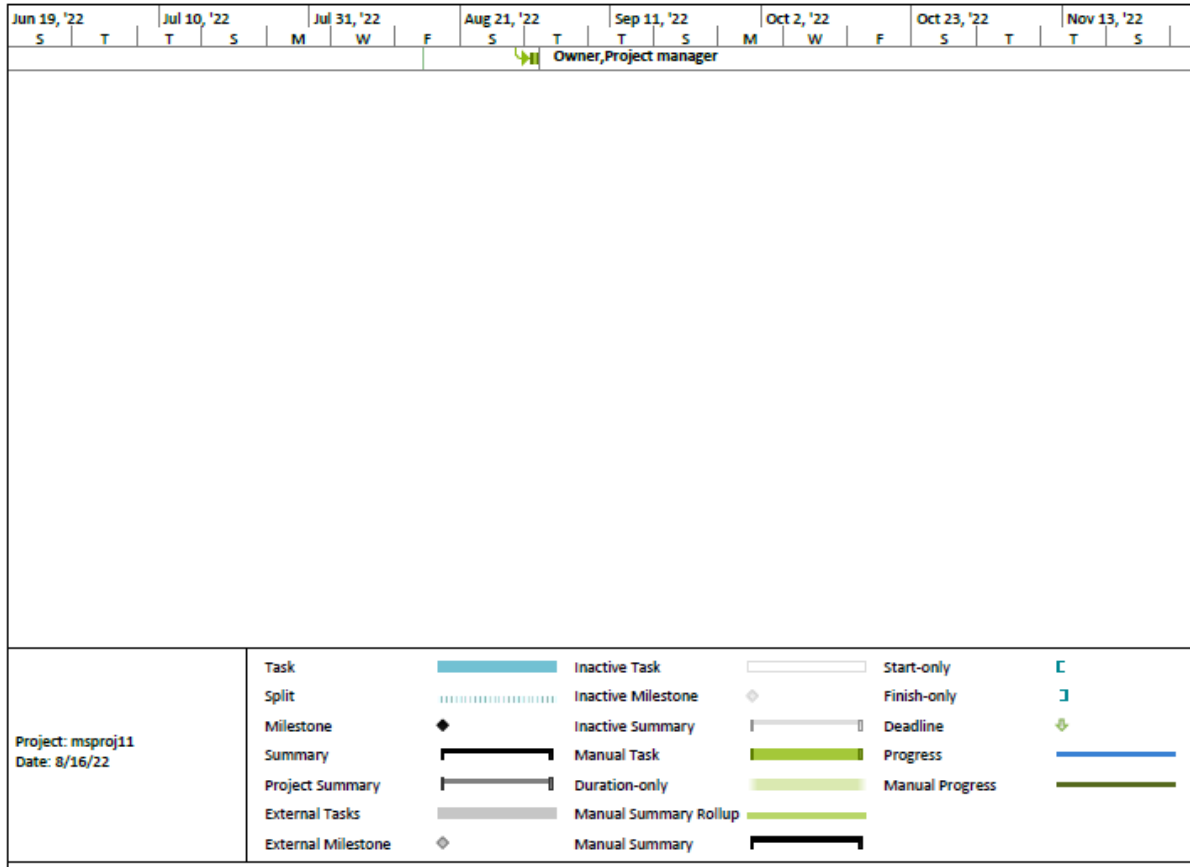


Figure 7.4 Gantt chart and milestones model

7.3. Project quality

At that stage, the quality of the project will be discussed in all its aspects of the services it provides in the Kingdom of Saudi Arabia regarding obtaining children's data and providing notifications to parents of vaccination dates

7.3.1. Deming model for quality

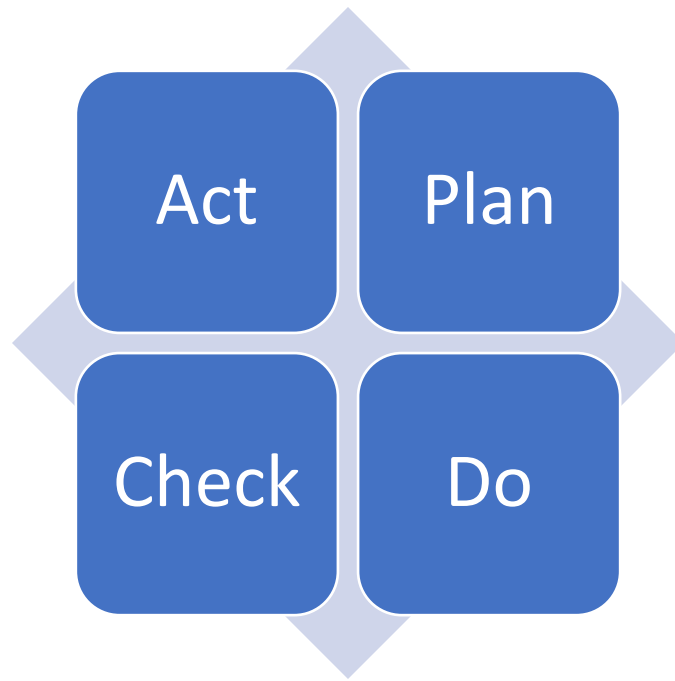


Figure 7.5: Deming model

Plan

At this stage, the quality of the project will be defined, results expected, and planning. Scientific discoveries must be dealt with and directed towards the goal. Predictive and analytical methods must be chosen, and errors detected and addressed.

Do

You are choosing the scope of the annotation about hospitals and children's data and the importance of implementing the project. Rather than simply deciding to make a change and fix all the processes suddenly, it is necessary to bring about the change slowly and frequently while testing hypotheses. Using studies that can be measured against control groups helps you better understand the data you receive.

Act

At that stage, the laws, policies, and legislations will be implemented and complied with.

Check

Formal and informal assessments are conducted constantly, from daily teacher assessments to six-week progress reports to annual standardized tests. Teachers can also access comparative data on the online database to identify trends. Data on children's vaccinations are monitored.

7.3.2.The SIPOC model and Ishikawa for one of the issues of the product output

S	I	P	O	C
Employees	the information	Input	Information and data	Service recipient
Data	children's data	outputs	Archive information	Notices and alerts
Team	Items required	Notifications	Continuously import data from hospitals	
Stakeholders		Alerts		

Table 7.2: SIPOC model

8. Chapter:8 Finance

8.1. Finance

In that chapter, the financing of the project will be discussed, as the project will be financed by the owner, and the cost of the project will be equal to SAR6,400.00, including development, programming and design costs.

WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names	% Complete	Cost
1	My Vaccination Application	58 days	6/10/22	8/30/22		Owner, Project manager	41%	SAR 6,400.00
1.1	Market study	23 days	6/10/22	7/12/22			74%	SAR0.00
1.1.1	Online search	10 days	6/10/22	6/23/22		Researcher	100%	SAR0.00
1.1.2	Read articles	5 days	6/24/22	6/30/22	3	Analyst, Researcher	45%	SAR0.00
1.1.3	Studying statistical figures about children and hospitals	8 days	7/1/22	7/12/22	4	Analyst, Researcher	60%	SAR0.00
1.2	Feasibility study	21 days	7/13/22	8/10/22	2		21%	SAR150.00
1.2.1	information collection	5 days	7/13/22	7/19/22	2,3	Analyst, Researcher	15%	SAR0.00
1.2.2	Divide the feasibility study among the team members	6 days	7/20/22	7/27/22	7,5	Project manager	20%	SAR0.00

1.2.3	financial and technology analysis	10 days	7/28/22	8/10/22	8	Analyst	25%	SAR150.00
1.3	Design stage	20 days	7/13/22	8/9/22	2,6		48%	SAR5,500.00
1.3.1	Hiring a programmer	6 days	7/28/22	8/4/22	8	Owner, Project manager	35%	SAR2,500.00
1.3.2	Hiring a designer	4 days	8/5/22	8/10/22	11	Owner, Project manager	40%	SAR3,000.00
1.3.3	Initial design study	15 days	8/11/22	8/31/22	12		55%	SAR0.00
1.4	Implementation phase	16 days	8/9/22	8/30/22	2,6		11%	SAR750.00
1.4.1	Implementation of application design	15 days	8/9/22	8/29/22		Designer, Developer	10%	SAR500.00
1.4.2	Review and examination	2 days	8/30/22	8/31/22	15	Designer, Developer	20%	SAR250.00
1.5	Launch	1 day	8/31/22	8/31/22	14	Owner, Project manager	0%	SAR0.00

Table 8.1 Project finance

9. Chapter:9 Resources, Procurement, plan, and control

In this project, there will be a heavy dependence on many resources, but on human resources such as employees, data entry personnel, and software developers. In addition to relying on technological resources because the project is based on the development of Mobile Application.

9.1. Resources

Resources are the additional files and static content used by the code, such as bitmaps, layout definitions, user interface threads, instructions for animation, and more. There will be three main types of data (human resources, financial resources, technology resources)

9.1.1. Concept of Resources leveling and smoothing

Resource leveling	Resource Smoothing
Availability of basic resources	project end-date will not change
There may be a project deadline	Project duration is fixed
There may be a change in the project budget	Time constrained schedule
Changes are allowed to critical path	Changes are not allowed to the critical path
Resources constrained schedule	Allocating the main resources

9.2. Procurement

There will be a contract for Procurement for the developer and application designer, and we must choose the best and most efficient for the project start-up.

9.2.1. Procurement execution selection and contractor selection

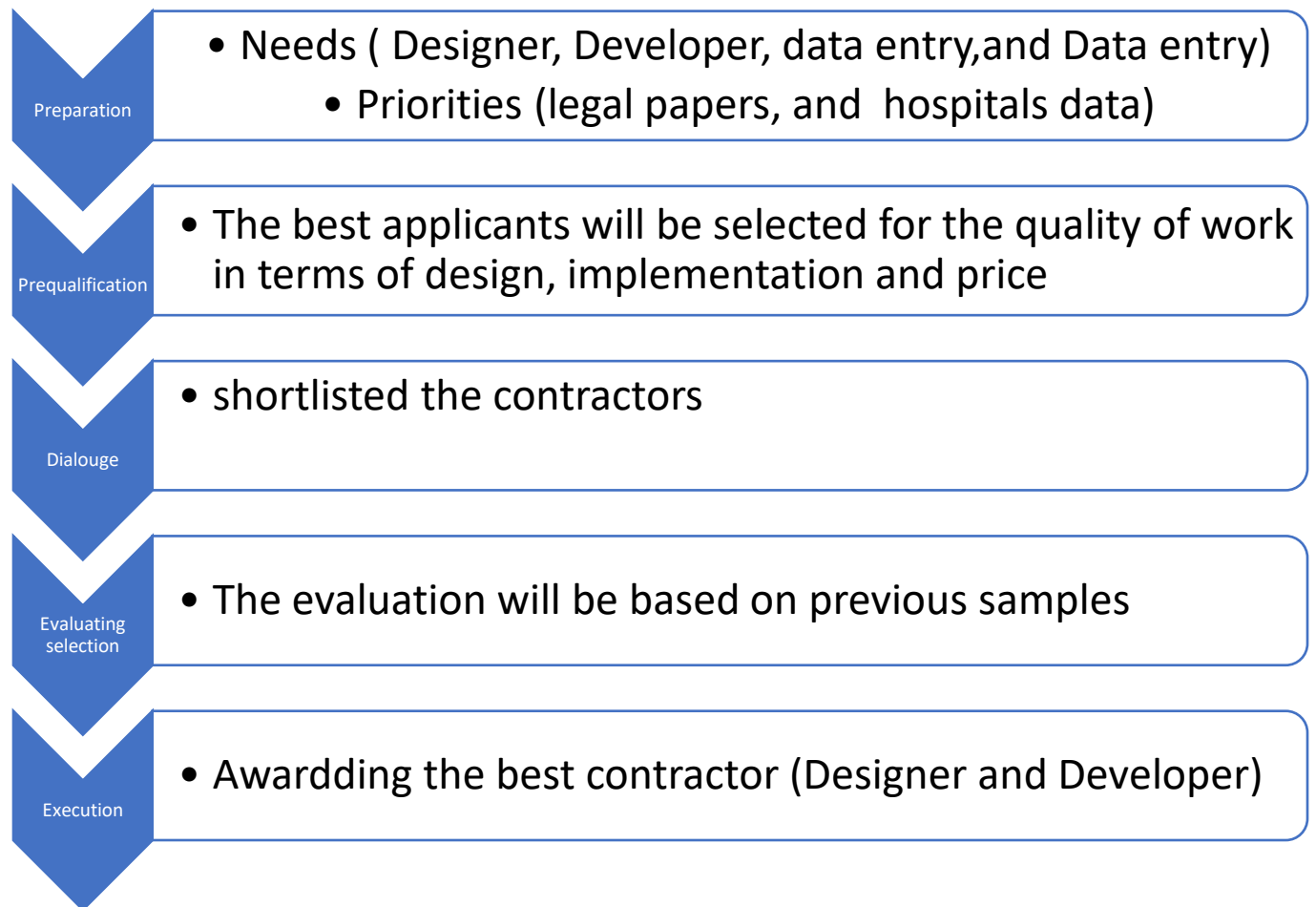


Figure 9.1 Procurement execution selection

9.3. Plan and control

Daily activities, such as scheduling, dispatch checking, quality evaluation, day-to-day operations management, data input, application efficiency, and quality, necessitate cost savings and efficiency planning.

While planning establishes objectives, missions, and actions for businesses to achieve consumer needs, controls are put in place to ensure that our firm can handle changes as they arise. In other words, control guarantees that businesses may swiftly adapt and adjust their strategies and operations.

9.3.1. Agenda invitation and virtual record of virtual meeting

Topic	Presenter	Time	Prepare the work
Market study	A	15 min	Discussing the market study and the number of hospitals and children in the Kingdom of Saudi Arabia
Feasibility study	B	30 min	Discussing the feasibility study that has been prepared
legal papers	C	15 min	Preparing and discussing legal requirements
Contractors	D	10 min	The study of Contractors and the efficiency of all of them
Design process	E	15 min	Study the form of the design and the shape of the final application
App development	F	10 min	Application development and coding study

Table 9.1: Agenda invitation

9.3.2. Performance measurements

Performance measurement is the process used to evaluate the efficiency and effectiveness of a My Vaccination project. Performance is usually measured by an organization to demonstrate accountability, support decision-making, and improve operations. Note that it is not an approach that describes what to measure; Organizations need to develop their performance measures based on their project plans and status. Performance metrics help make strategic decisions about what an organization does and how it performs. Performance measurement frameworks are flexible and can be used to measure the effectiveness of a pilot project, multi-year program, or strategic planning process and can be applied to a new or existing initiative. (ontario, 2022)

The performance measurement framework defines the indicators required to monitor and measure program performance. Its purpose is:

- Define measures
- Communication and Analysis Methodology
- Roles and Responsibilities
- Report using a logic model
- Continuous monitoring and evaluation of program results and the efficiency of their management
- Make informed decisions and take appropriate and timely action in relation to My Vaccination application
- Provide effective and relevant management reports on the project
- Ensure that the information collected will effectively support the evaluation
- There is no single way to develop a performance measurement framework.

9.3.3.Change request model

project name	My Application Vaccination		
Requested by	Project manager	Date	5/Aug/2022
Requested name	Changing design color	Request number	##012
Change description	Changing the color from red to green		
Change reason	It matches the colors of the Saudi Arabian flag		
Impact of changes	The color of the design must be appropriate to the colors of the Kingdom of Saudi Arabia, as it will serve the people of Saudi Arabia		
proposed action	Changing the color		
Associated action	Changing the main idea of logo design		
Associated cost	SAR250		
Approved by	Project manager	Date	10/Aug/2022

Table 9.2 Change request model

10. Chapter: 10 Stakeholder`s risk and opportunities

Stakeholders can be divided into internal and external, and each important person has a specific opportunity and risks, as these opportunities and risk scan affect the success and effectiveness of the project.

10.1. Risk and opportunities

Using the risk-taking process to address solely the negative aspects of uncertainty is an unavoidable one-way track. If the process only identifies hazards that potentially have a negative impact, then solutions geared to address those threats can only help the project or organization get back on track. Any deviation recovery is likely to be partial at best, leaving a performance loss. (Hillson, 2001)

10.1.1. Threats and opportunities with examples

Opportunities

There are many opportunities that enhance our ability to complete the project with high quality and efficiency. Facilities from the Saudi government regarding legal procedures, as well as facilities for obtaining databases from hospitals

Threats

As for the external threats that our project may face, it may be about the delay in sending databases from hospitals, or about poor design from the developer and designer

10.1.2. Risk register

Risk ID	Risk description	Likelihood of the risk occurring	Severity	Risk level	Planning and control
1	<i>Late arrival of the databases may lead to a delay in launching the application</i>	3	2	6	<i>Send delegates to hospitals to obtain databases</i>
2	Bad design can make us redesign again	5	4	20	Hiring a professional designer
3	Wrong data entry fails from process system	3	5	15	Explanation of data entry methods for parents
4	Increasing the project budget may be delayed from the project launch date	4	1	4	Determine the budget for each step in the project

10.1.3. Qualitative risk analysis

Risk Statement	Initial Risk Owner	Risk May Occur In	Risk Probability	Schedule	Cost	Schedule Score	Cost Score	Final Score
loss of records	Community Relations	Final Design	3 - Moderate	2 - Low	4 - Moderate	6	12	18
Low-quality design	Construction	Preliminary Engineering	4 - High	7 - High	2 - Low	28	8	36
Low budget	Drainage	Construction	4 - High	1 - Very Low	10 - Very High	4	40	44
Difficulty hiring a designer and developer	Geometric Design	Preliminary Engineering	4 - High	10 - Very High	2 - Low	40	8	48

10.1.4. Risk response strategy

Avoid: This risk response strategy is all about removing the threat by any means. This may mean changing the project management plan to avoid risks because they are detrimental to the project.

Mitigation: We will mitigate some risks such as design risks and obtaining children's data from hospitals.

Transfer: Through insurance and obtaining guarantees of signing contracts with hospitals to update data.

Acceptance: This risk response strategy is to identify risks and document all risk management information related to them, but take no action unless risks occur.

10.2. Stakeholders

The stakeholders have been divided into internal and external stakeholders, where they can be divided into internal stakeholders who are working on the project. As for the external stakeholders, they are the Ministry of Technology, users, and others.

10.2.1. Stakeholder assessment matrix

Name	Title	Contact Information	Communication Types	Communication Vehicles	Stake In Project
Moahmmmed Alanazi	Owner	Mohammed@vaccination.com	Internal Status Meetings	E-Mail	Designs and Application Data
Ahmed	Designer	Ahmed@vaccination.com	Internal Status Meetings	Phone	Design updates
Mohammed barnawi	Project manager	Mohammed@vaccination.com	Team Lead Meetings	E-Mail	Monitoring

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