

Project Name
House Construction

Group Number
5147

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Acknowledgements:

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The Team

Preface:

Management of construction is a mix between science and art, something kind of hard to do. Hard because the variables that the project contains and guessing the effects of each variable on the project.

Construction management is a process to manage construction projects. The distinction when comparing other types of projects, is mostly that Construction is based in mission. In another meaning that the organization of this project ends by the end of the project

wider variety of constraints to consider that are specific to the design and build of construction projects. Construction project management can interact with a variety of different disciplines in the lifetime of a project as well, from architecture to engineering to public works to city planning.

House Construction is a process with a technique following certain requirements and procedures to reach the living requirements available today in the market.

Size, luxury, finishing, location, and other factors affects the cost of such kind of these projects. Prices for mid-level families for such projects in Saudi Arabia varies between 1 to 2 Million SAR taking in consideration the city and district of the project that will be constructed in.

1. Mission:

Our company aims to become the number one construction contractor in Saudi Arabia by providing the best possible workmanship, committing to sound work ethics, be honest to all stakeholders, achieving more than 80% customer satisfaction, paying attention to the newest industry trends, and prioritizing environmental preservation by reducing our carbon footprint by 3% each year in the coming three years and 15% by the end of 5 years.

Our project team's mission is to complete this house construction project on time, under budget constraints, make it a modern dwelling and achieve full customer satisfaction.

2. Company and Project Vision

Our Vision is to create better living for everyone by creating energy-efficient and modern dwellings.

Our project team's vision is to make this building 70% more energy-efficient as compared to the other similar buildings in the country and to obtain an Energy Star rating.

3. Develop and identify the objectives in a SMART model:

3.1. What is SMART:

SMART is a mechanism for setting goals to be specific, measurable, achievable, relevant, and time bound. Setting and achieving goals is one of the essential skills for successful entrepreneurs and business leaders, with “goal” the main gateway to achieving the mission. The clearer and more explicit the goal, the greater the chance of achieving and reaching it.

This method facilitates achieving goals by helping to better define goals so that they can be tracked and achieved more easily. In order to do this, the SMART mechanism follows five main determinants that contribute to clarifying and detailing the goal clearly and clearly, and they are in English words bearing the first letters of the word as follows:

3.1.1. Specific:

The specific goal of this project is to construct a house within the time and budget constraints and as per the expectations of the project owner/customer. The stakeholders involved in this project are the project manager, contractor, house owner, and supplier. To achieve this goal, the Project manager will meet monthly with the project owner to discuss the progress of the project. He will meet with suppliers and contractors weekly and one meeting at least in 2 weeks will be a must.

3.1.2. Measurable:

The goal will be to complete this project within the budget of \$900,000 and before August 2023. This will be achieved by coordinated efforts of all project members. The project must meet Energy Star Rating.

3.1.3. Achievable:

The team has developed a clear schedule for the successful completion of this project, and we believe that the goals of this project are attainable. The project team will have no other projects running in parallel at the execution time of this calendar and will focus all their energies on this project.

3.1.4. Relevant:

If the project completes in time and under budget constraints, the project team will receive a bonus. It will not only benefit our company but the project owner as well because he will be able to save on house rents.

3.1.5. Time-Bound:

The project needs to be completed before August 22 and the project will be termed a failure if it does not complete in time. The project cost is directly linked to the time the resources spend on the project. So, definitely the project cost will exceed budget constraints.

4. Develop and identify the performance measurement indicators, Lead or Lag:

Tracking and carefully evaluating a variety of key performance indicators (KPIs) assists a construction business in developing long-term resilience while reaching short-term financial objectives (Versteeg et.al, 2019). Key indicators of performance (KPIs) are variables that evaluate the success of a company in reaching its goals.

Leading Indicators

Inputs to a project are sometimes regarded as leading indicators. They describe what activities are required to obtain quantifiable results for your goals. The important leading indicators for our business are described below:

An important leading indicator for our business and this project is Gross Profit. Specialized software will be used for tracking the progress of the project and timely communication will be made to all stakeholders. So, the leading indicator will be the use of specialized software like Project Professional to make an anticipated project schedule. Another leading indicator would be the identification of project deliverables that can be sped up. Using Earned Value Management, a future projection of the project would be possible.

Time spent with project stakeholders and especially the project owner would serve as another leading indicator.

Among high-risk businesses, the construction industry has one of the highest incidence rates. A safer construction site has lower risks and long-term expenses. If issues arise, they may cause our project to be delayed in both time and money. Aside from that, safety issues might result in increased insurance rates. As a result, knowing and understanding our safety rating is critical to lowering expenses and keeping your employees productive. So, the safety meetings will be a good leading indicator for our business.

Lagging Indicators

A lagging indicator monitors current output and results. The important lagging indicators for our business and this project in particular are:

How much money is being spent on each project deliverable will be a lagging indicator. The project team will use Microsoft Project Professional to make a project cost schedule. A baseline cost schedule will be made, and progress will be compared to this baseline to indicate if the project is on track or off track as per the monetary terms.

Another lagging indicator would be the project owner's satisfaction with each deliverable. Project team satisfaction would be measured through surveys and would be a good lagging indicator.

Accidents would serve as a lagging indicator.

Other lagging indicators are net profit and turnover.

In conjunction with leading indicators, lagging indicators are best utilized for determining trends and if targets have been attained. This may be made easier with the proper technological infrastructure that compares and provides insight into leading and trailing indicators.

5. Develop and prepare the project charter Model

This Project Charter describes the purpose, scope, objectives, estimated cost, milestones, duration, risk and constraints, approach and organization of house construction (s): (Norman E.S. and et al, 2008), (Jones, A., and et al, 2010), (Landis, T.,2008)).

5.1.General Project Information:

Table 1: General project information for the house construction project

Name of project	House Construction Project
Project Manager	XXXXX
Project Manager Address	ESU
Estimated Start date	July 1, 2022
Estimated Cost	SAR 900,000
Project Number	XXXX
Project Sponsor	Smart Company
Project manager phone No.	+966 5 XXX XXX XXX
Project manager Email	manager@smartcompany.com
Expected completion date	MMM DD YYYY
Expected saving	SAR XXX,XXX,XX

5.2.Project Description:

This project is being undertaken to create a new house for [the customer](#) and his family. The new house will be a free-standing, single-family dwelling built on a three-acre lot (lot #1) located at Olya, Riyadh.

The project is to commence on September 1, 2021 and will complete no later than September 30, 2024.

This home is being constructed to take benefit of the latest building materials and codes and will employ emerging technology to diminish energy consumption.

Construction will be overseen and managed by smart company, the prime contractor who may subcontract components of the construction effort.

5.3.Project Purpose:

The purpose of this project is to establish a new primary residence for [the customer](#) and his family. The project will carry out all phases from acquiring the land, getting permits and approvals for all essential documents, building the house, electrical, plumbing, finishing landscaping, internal designing, and decoration outside and inside on time and under budget constraints.

The new house is planned for completion in December 30, 2024, thus [the customer](#) will be ready to furnish it and move in during the first weeks in Jan 2024.

5.4.Project Objective:

Developing house building by using high technology to minimize energy consumption

5.5.Business Reasons for the Project:

1. Community service and environmental preservation.
2. Construction and maintenance of buildings.
3. Social services.
4. environmental protection.
5. local economic development.
6. public security.
7. Service of public decoration.

8. infrastructure and public services.

5.6. Project Scope:

The project scope includes a basement foundation, landscaping, entryway, two-story home with 4 bedrooms and an office area, 2-car garage, and deck/patio within the budget of SAR 900,000.

This is a Fixed-Price Contract Contractor commitment estimate is SAR 900,000.

5.7. Project Stages:

Table 2: Stages of the house construction project

Stage	Description
Initiation	Developed Project Charter
Planning	Get a land Obtain permits Arrange hydro, gas, water, etc. system
Design	Architectural sketches (exterior and interior) complete and approved. Completion of excavation Landscaping Utilities
Execution	Construction Exterior Construction Foundation Timber frame Walls Roofs Driveway & Landscaping Doors & Windows Roofs Interior Construction Plumbing Wiring system Interior decorating
Control	
Closure	Completed

5.8.Milestone Dates:

The construction of house should be completed before the deadline 30 September 30, 2024. Progress milestones associated with the project illustrated in table 3.

Table 3: Milestones of the house construction project

Milestones	Due	Deadline
Architectural drawings complete and approved		
2. Building permit approved		
3. Lot preparation and clearing complete		
4. Foundation excavation complete		
5. Footings poured and set		
6. Foundation poured, block construction complete, foundation set		
7. Home and garage exterior closed to weather		
8. Driveway and landscape complete		
9. Interior wiring complete		
10. Exterior wiring complete		
12. Interior plumbing complete		
13. Exterior plumbing complete		
14. Interior finish complete		
15. Exterior finish complete		
16. Walkthrough complete		
17. Certificate of Occupancy granted		
18. Interior and exterior punch list approved		
19. Interior and exterior punch list complete		
20. Acceptance review and key turnover complete		

5.9.Project Deliverables:

Projects deliverables, which are the output or results of the project or the processes in the house construction, which are illustrated in table 4.

Table 4: Deliverables of the house construction project

No.	Name	Key performance indicators (KPI)
	The target deliverable is completed construction house on time	50% of building should be completed within six months 100% of construction should be finished before August 2023
1	Prepare project plan	First week
2	Building permits	Second week
3	Site plan	Third week
4	Design drawings	By end of first month
5	Design documents	Every month
6	The engineering reports	Every three months
7	Product quality enhancement	90% compliance with standard
8	Construction	10% finished by the end of first second month 30% finished by the end of third month 50% of building should be completed within six months 70% of construction should be completed by the end of third quarter The building should be completed 100% at the 18 th month.
9	Plumbing	70% completed by the third quarter of year
10	Electrical	70% completed by the third quarter of year
11	Technology	90% after 10 months
12	Landscape	50% at the beginning second quarter of year
13	A completed house	End of the year

5.10. Communication Management:

Communication strategies have been implemented to encourage the effective communication.

Project Manager will present project status on a biweekly basis.

The stakeholders will be notified via e-mail or telephone of all urgent issues.

5.11. Resource Management:

The Prime Contractor will yield a Resource Management Plan that will document the following:

5.11.1. All materials and services to be delivered as part of the project along with cost estimates and quality information

5.11.2. Which materials and services will be attained from sources outside the Prime Contractor's organization.

5.12. Stakeholders:

Stakeholder defined as an "individual or group that has an interest in any decision or activity of project. Table5, present the stakeholders who affect or affected by our project.

Table 5: Stakeholder Identification

	Name	Contact information
Internal stakeholders		
Project manager	-	0966554120000 / xxx@gmail.com
Finance manager	-	0966554120000 / xxx@gmail.com
Human resource manager	-	0966554120000 / xxx@gmail.com
QI manager	-	0966554120000 / xxx@gmail.com
facilities manager	-	0966554120000 / xxx@gmail.com
Teamwork:	-	
Designers (Architects)	-	0966554120000 / xxx@gmail.com
Structural Engineer	-	0966554120000 / xxx@gmail.com
Engineer 1	-	0966554120000 / xxx@gmail.com

Engineer 2	-	0966554120000 / xxx@gmail.com
External stakeholders:		
Contractors		0966554120000 / xxx@gmail.com
Vendors	-	0966554120000 / xxx@gmail.com
Client		
Subcontractors	-	0966554120000 / xxx@gmail.com
Utilities	-	0966554120000 / xxx@gmail.com
Government Authorities	-	0966554120000 / xxx@gmail.com
Suppliers	-	0966554120000 / xxx@gmail.com
Consultants	-	0966554120000 / xxx@gmail.com

5.13. Project Organization:

Project organizational structures defined as an organizational forms, based on temporary teams that are created to perform particular tasks and disappear after achieving the established goals, (San Cristóbal, J.R. and Fernández, E., 2018)

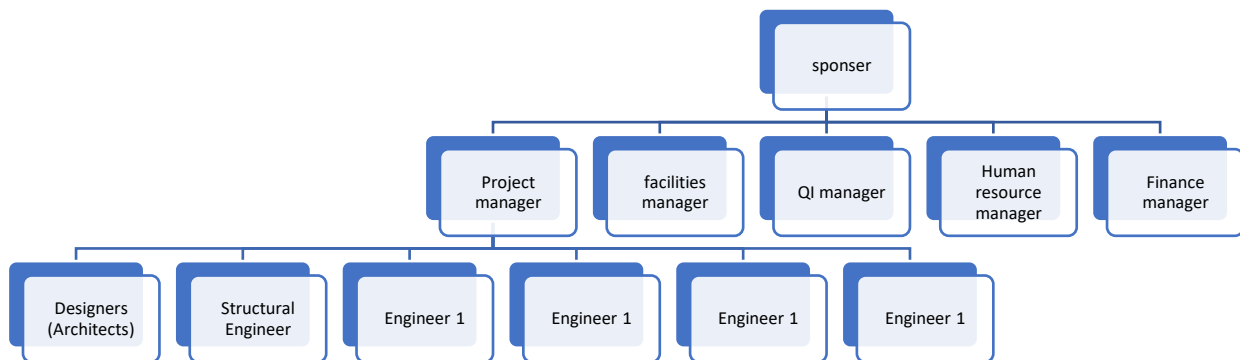


Figure1: Organization structures chart

5.14. Constrains:

Project constraints are limiting factors. for that, it can disturb quality, delivery, and overall project success. Table 6 shows the house construction constraints.

Table 6: Project constraints

Constraints	Remark
Scope	85- 90% of a house must be done before April 2024 and 100% of completion before sign-off date by March 30, 2023.
Time	completion: within one year before July 30, 2023.
Cost	Only SAR 900,000 maximum budget
Resource	availability is based on the working
Schedule	Sunday – Thursday: 8.30am – 5pm Saturday: (if necessary) 10am – 4pm
Weather	exterior constructing depends on whether condition (Temp > 45)

5.15. Risks:

Project risks are uncertain factors, either internal or external to a project, that, if it occurs, may cause the project to fail to meet one or more of its objectives, Table 7 shows the suspected risks

Table 7: Project risks

Description	Probability	Impact	Mitigation Strategies
Time overruns: The team may be not meet deadlines due to added the specification features and new technology.	Low	High	
budget: The team may be run out of the budget due to unexpected increases in material costs	Low	High	
loss of important suppliers	Low	High	Assurance
damage by fire, flood, or other natural disasters	Low	High	Assurance
injuries to workers	Medium	High	Assurance

5.16. Project Approach:

Prime contract's responsibilities are as followed:

1. Keep track all project documents and schedule
2. Take a duty for all subcontract oversight, deliverables and management. Agrees for the fixed-price contact and schedules.
3. Perform responsibility of completing tasks with contractor's own employees, verifying all subcontractor and own employees.
4. Hold meeting in order to solve problems as well as tracking the progress by daily or weekly or monthly.

5.17. Project Schedule:

Review part of purpose and project approach. Prime contractor will provide detailed schedule prior to the start of project.

5.18. Requirement for Approval:

Any modifications to the scope of the project must be approved by the sponsor/owner of the project. The home must be certified ENERGY STAR by the independent ENERGY STAR partner. This agreement recognizes the evaluation of the project charter and authorizes and finances the project. In case of any modifications, the signatories will continue to approve this proposed charter.

Project Sponsor:	_____	_____
	<Name, Title>	<Date>
Project Stakeholders:	_____	_____
	<Name, Title>	<Date>
Project Manager:	_____	_____
	<Name, Title>	<Date>
Document prepared by:	_____	_____
	<Name, Title>	<Date>
Document date:	_____	
	<Date>	
Approver(s)	_____	_____
	<Name, Title>	<Date>
	_____	_____
	<Name, Title>	<Date>
	_____	_____
	<Name, Title>	<Date>

6. Develop an organizational structure for the teams and units of the project.

A company's organizational structure is a visual diagram that outlines what people perform, who they report to, and how decisions are made within the firm. In business, the types of organizational structures are equally as significant as the company's goods, marketing approach, and long-term strategy. Businesses often select one of four organizational structures. Each comes with its own set of benefits and drawbacks (Devaney, 2021).

The organizational structure for our project is shown below. The project is led by Mohammed Alsati who acts as a project manager and represents our company. The project team is divided into 5 offices. Each office has a manager or supervisor who is responsible for all the activities relevant to that office. The first office on our project is led by Chief Architect. Structural engineer, safety officer, quantity surveyor, and draftsmen report to the Chief Architect. Sustainability Expert oversees Quality Control Engineer. One of the main offices in this project is the office of the Construction Manager. The construction manager oversees the activities of a civil engineer, electrical engineer, mechanical engineer, local authority, logistics, and sub-contractors manager. The Planning Engineer oversees all project planning, scheduling, and budgeting activities. The last office in our project is the administration office. It includes accounting, payroll, and HR.

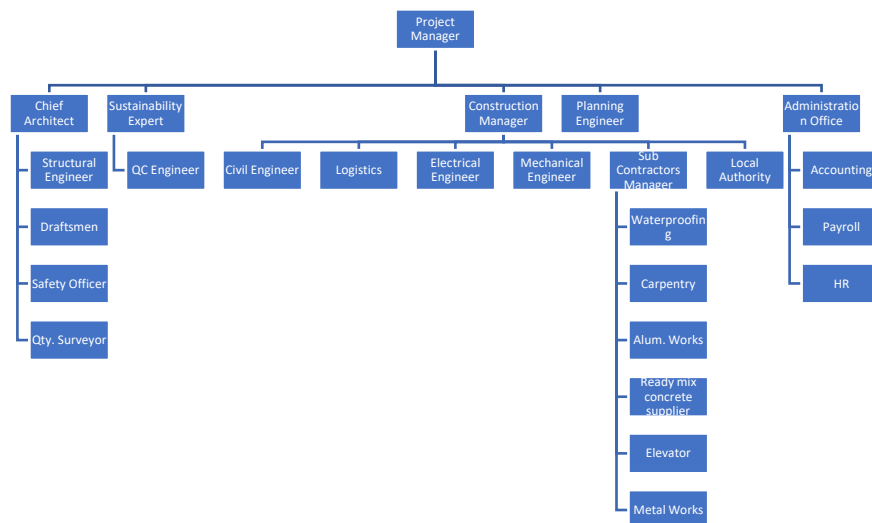


Figure 1 Organizational Chart

7. Identify the practical and scientific bases, which adopted in developing the structure.

Choosing the proper one for your company is critical since inadequate organizational structure leads to employee confusion, bad decision-making among management, and, eventually, only little business results. The most conventional method is a functional structure. It advocates grouping together employees who perform similar jobs depending on their area of expertise. People in a divisional structure are grouped together based on the product or service they deliver, rather than the labor they undertake. A matrix structure is a cross between a functional and a divisional structure. Employees may report to various managers based on their present position. The flat structure eliminates the traditional functional organization's hierarchy, decentralizing management and eliminating the necessity for middle manager supervisors (Devaney, 2021).

Our project has a limited duration, its organization differs from that of an operational corporation. Employees on the project team are drawn from a company's regular labor force and will return after the project is completed. Salaries, benefits, and disciplinary issues are handled by the corporate structure, whereas work-related choices are handled by the project organizational structure, which is comprised of functional units and work teams that report to the project manager.

Hierarchical system:

Our project's management activities are structured in a hierarchical framework to promote operational efficiency. A hierarchical structure allows the project manager complete control over schedule and pricing details for low-risk projects like this one. An organization in which everyone reports to the project manager through their own intermediate supervisors is efficient and has clear lines of command. The hierarchical organization is very successful for small projects since it has a basic structure and distinct duties for each person. Its biggest downside is its rigidity, which limits its utility for projects requiring fast choices at the work level.

Reason:

Members of functional departments may be used to a single reporting line in a hierarchical system in a matrix structure, but the project manager supervises the work of team members chosen from functional departments. Within the matrix organization, the functional structure is in charge of project implementation prioritization, coordination,

and final decisions. As a result, there may be tensions between functional divisions and project teams (Cheng, et.al, 2003). The project manager must be given the power and duty to handle diverse issues so that the defined project policy and quality requirements are not threatened

8. Identify projects office model, most appropriate to manage the project, in addition to mentioning the reason

Types of project management offices according to the standards of the PMI

There are several types of project management offices that vary in the degree of control and influence over projects in the organization, and their role varies from providing project support to direct management of the projects themselves. Choosing the most appropriate one for your organization depends on its size, nature of business, and the existing culture.

8.1.Types of Project Management Offices (PMOs):

There are several classifications of project management offices (PMOs), and in these lines there are three well-known types that researchers and project experts have agreed upon and dealt with in much detail:

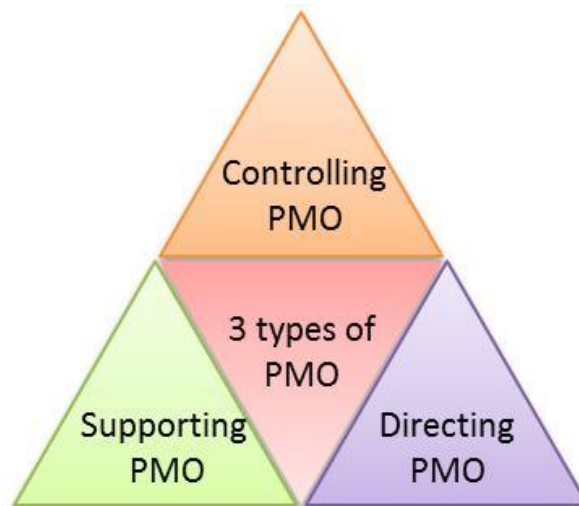


Figure 2: types of PMO

8.1.1. Supportive PMO (low control):

This type of office provides support in the form of on-demand advice and provides forms, information, technical support and training to the project team without imposing control or control over the projects and their activities.

This type of office is suitable for organizations that are successful in most of their projects and just need something like an information center. This type is characterized by a low level of control and control over projects and their teams, in addition to the presence of unified standards that are followed in all projects.

8.1.2. Controlling PMO (moderate control):

This type of office provides a unified framework for the organization, which necessitates modification and modification in the methodologies used as well as the forms and applications. It imposes a medium level of control and control over projects and their activities.

This model is used in organizations that wish to have control over activities, processes, and procedures.

8.1.3. (Directive PMO):

This type is characterized by a great level of control over the projects, and even managing them completely with the provision of the necessary support and resources. As soon as the institution contracts on the project, the office identifies managers for it. This type is also characterized by providing high professionalism in project management, as each manager writes periodic reports for the office, which ensures a very high level of consistency in work at the level of all projects. This type is very suitable for large organizations that need technical support in many and varied places.

Other classifications of project management office types:

8.2.PMI classifies Project Management Offices (PMOs) into 5 types:

1. Departmental: It supports specific business units or departments.
2. Project-specific: It oversees the success of a specific project.
3. Strategic: He oversees a major organizational change process.
4. Project-support: handles administrative tasks to expedite project completion.
5. Center of Excellence: It is concerned with training and development for project managers.

8.3. Project Management Offices (PMOs) from an institutional Point of view:

From an **institutional point of view**, Project Management Offices (PMOs) can be classified into one of the following types:

1. Enterprise Project Management Office (PMO).
2. Section Project Management Office (PMO).
3. Private Project Management Office (PMO).

8.4. House Construction Projects:

The most appropriate office for him is the Office of Special Projects Management, specifically for specific projects, and it oversees the success of a specific project.

9. Design a check compliance model before delivering the project outputs.

Companies create process models to explain their business activities precisely. At the same time, company activities and business processes must meet several kinds of conformity standards. Compliance requirements are not static and change over time. Because legislation changes and new policies are adopted, new obligations may arise (Nguyen, T. H., & Kim, J. L., 2011). Various entities that have different purposes behind these criteria offer or apply compliance requirements. Finally, conformity standards may influence many elements of business operations, such as the flow of control and data flow. It is therefore impossible to examine tools for hard-code compliance. Instead, a repeatable procedure is necessary to model compliance standards and validate them automatically for business operations. A compliance framework/model is a systematic collection of Guidelines for aggregating, coordinating, and integrating all of the organizational compliance needs.

It is essential to have an effective compliance testing program to manage the compliance risks of our organization and to ensure that our compliance management systems are in good health (Awad, A, 2010) . We need to recall that we test a rule against, a regulation or a law, or a statute, meaning that all finding is a breach of law or a statute. To mitigate the compliance risk faced by our company, it is important to identify violations of requirements (e.g., regulatory or internal policy) and to quickly remedy the fundamental cause.

Our company has outlined these steps for Effective Compliance Testing Process:

1. Build the Requirements Library
2. Perform the Compliance Risk Assessment
3. Develop the Compliance Testing Methodology
4. Build the Testing Schedule
5. Perform Testing
6. Issues Management Process
7. Validate Remediation
8. Monitor Sustainability

Building industry standards and guidelines are used to harmonize and ensure the technological requirements for structural stability, dependability, material quality, and, at least, the safety of the user. Therefore, throughout the implementation of a building project, the compliance check of the design plan concerning the rules and regulations is an essential procedure. The planning consultant, from which a very high degree of knowledge, experience, and attention is required appropriately, has to consider several rules and laws because of its many disciplines and subject areas in the construction business.

One of the most significant concerns in the planning of a building project is continuous high-quality design planning. Thus, the correctness and compliance with the appropriate regulations and guidelines must be continually verified over the length of the project. This verification procedure nowadays is tedious, and fault-prone, since the responsible planning consultant generally performs iterating on a manual basis based on two-dimensional planning. Several techniques recently tried, using digital technologies like Building Information Modeling (Preidel and Borrmann, 2015), to automate this very significant procedure in order to minimize working hours while simultaneously increasing the quality of the schedule.

The continuous development of new technologies in recent years has transformed the construction business, which has started with the technique of information building modeling, in particular (BIM) (Awad, A, 2010). New practices and fields of research developed with a number of new techniques to make building processes more efficient by the use of new digital technologies and the quick cross-linking of increasingly

powerful computers. The construction sector has therefore obtained the required resources in terms of effort, time, and costs to automate and optimize control processes. All information is saved during the BIM planning phase in a single digital building model, which offers all the up-to-date information for all project participants throughout the whole building life cycle.

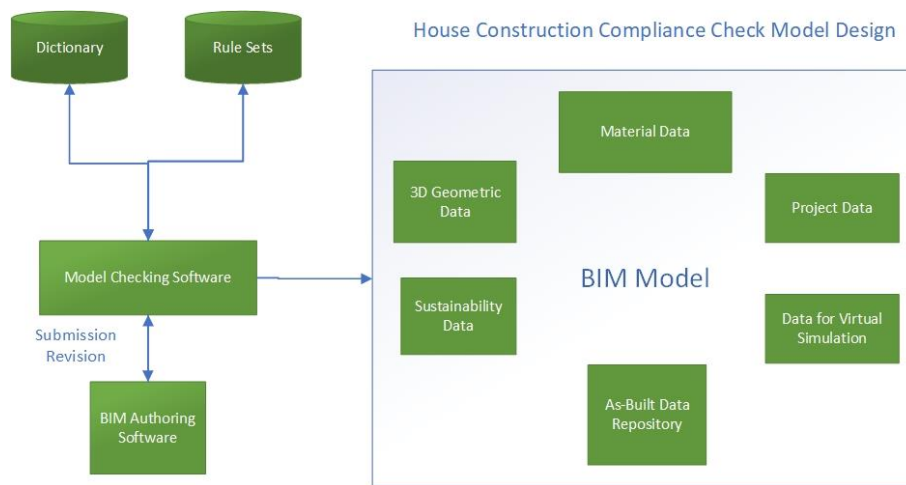


Figure 3: House construction compliance check model design

Our company's compliance check model based on BIM is outlined in the figure above. Dictionary contains a set of existing compliance requirements in the construction industry. It is a database that would be updated when new compliance requirements arise. The Rule Sets contains rules for updating the data in the Dictionary. Model Checking Software will read rules from Rule Sets and submits them to BIM Authoring Software. The approved rules will be then updated in the Dictionary as well as forwarded to the BIM Model where this data will be saved in one of the six categories in the BIM Model. BIM consists of six databases and each of them stores different types of data. The BIM Model will contain material data, 3D geometric data, sustainability data, project data, data for virtual simulation, and as-built repository data. The project data will contain information about the project stakeholders, communication channels and frequency of information, names of vendors and suppliers, operational and financial data. The sustainability data will consist of sustainable development practices, a list of green technologies, and the energy-efficient mechanisms for reducing the carbon footprint of the project and make building energy efficient. This data will be really

helpful in getting the Energy Star Rating for this building. The As-Built Repository data will collect data directly from the supply chain when the products like doors, windows, and the other pre-built products are purchased, this data will be compared against building design requirements set by the architects. In this way, we will be able to check if an installed door meets the design requirements.

BIM Model will be able to auto-generate 3D drawings for the building, provide a virtual simulation of the final product, provide a list of materials that have been consumed and left after project completion, provide a sustainability checklist for the project, and provide in-depth details of the project. This BIM model will also contain data of similar projects in the past and therefore provide us with a mechanism of comparing two or more similar projects. It will contain inputs from the project owner for this particular project and provide a means to compare owner expectations against the generated output. The final output in this project is a house building, the requirements for which are already provided in the project charter. Those requirements are listed again for reference:

1. Landscaping.
2. Basement.
3. Driveway – concrete with a brick.
4. Utilities (hydro, gas, water, etc.).
5. 3 floors – 4800 square feet.
6. Two-car Garage – 1500 square feet.
7. Deck / Patio.

The BIM Compliance Check Model has this information and the other specific requirements i.e., the color of the building, door types and dimensions, vendors information, and the quality of materials all stored in the appropriate databases. The BIM model will provide a means to compare project outputs with these requirements.

Automated compliance control of building designs with the use of model checking software is a feasible possibility with the development of Building Information Modeling (BIM). BIMs will likely become essential digital assets in the near future, which will not only communicate with design but will also be key tools for getting permission from statutory authorities. The manual control of building designs to comply with national regulations is complicated and susceptible to human mistakes with substantial economic effects. Auto mechanized conformity checks are said to be useful

not just to designers but also to building certifiers, consultants, building code authorities, design authors, and constructors.

9.1. Project Compliance Checklist:

The project Compliance review process is illustrated in table 8.

Table 8: Project Compliance Checklist

House Construction Project			
Parameters	Indicators	Compliance	Remarks
- Project Performance	Cost performance		
	Schedule performance		
	Quality performance		
	Safety performance		
	Reworks		
	Change Orders		
- Customer Satisfaction	Customer expectations met		
	Customer satisfied with the quality		
	Schedule satisfaction		
- Project Success	Timely completion		
	Completed within budget		
	Meets quality requirements		
	Meets design requirements		
	Satisfaction of all involved stakeholders		

10. Develop Check List model for the three stages of the project (Start- Plan- Achieve- Close)

Checklist Model for the Project Stages:

Table 9: Checklist Model for the Project Stages

Checklist Name	Description	Status
Project Initiation Checklist	Is the scope of the project clear?	Closed
	Is the project funding approved?	Closed
	Have all the stakeholders been identified?	Under Review
	Has a sponsor been identified?	Closed
	Does the project contain 3rd Party or external resources?	Open
	Have you confirmed in writing the project delivery expectations (time and scope) with all the stakeholders?	Open
	Have all the project benefits been captured and are reasonable?	Open
	Are you aware of the process of getting the project approved?	Open
	Does the business case cover assumptions, dependencies, and constraints?	Open
	Do you need a risk assessment to be conducted?	Open
	Will the project costs be capitalized?	Open
	Do you have a high-level effort estimate for the project?	Open
	Are you supposed to use a standard template for the initiation document?	Open
	Has the project team been established or resources available to start the project?	Open
	Does the project need an approved business case to start work?	Open
	Have you organized a project kick-off meeting?	Open
	Does the project team need any training?	Open

Project Planning Checklist	Are you comfortable with the skill level of the project team?	Open
	Do you need a project management plan?	Open
	Do you have enough contingency or buffer in the budget and schedule?	Open
	Is there a vendor contract involved in the project?	Open
	Have all the project components been estimated?	Open
	Do you have a detailed project schedule drafted?	Open
	Do you need a work breakdown structure?	Open
	Have you created a baseline for the project plan?	Open
	Is the project team comfortable with the project schedule?	Open
	Do you have clearly defined the milestones for the project?	Open
	How do you plan to track project progress?	Open
	Have the team left plans and public holidays been factored into the project plan?	Open
	Do you have a resource plan for the duration of the project?	Open
	Do you need to hire additional resources for the project? If yes, has the hiring process been kicked off?	Open
	Have you factored in the resourcing costs in the plan?	Open
	Are you aware of the SMEs required for the project?	Open
	Is your project schedule detailed enough for the project team to understand the tasks?	Open
	Is there a quality assurance plan for the project?	Open
Project Execution Phase Checklist	Has the project scope been finalized by the stakeholders?	Open
	Have the business requirements been finalized and signed off?	Open
	Is there a peer/code review practice in place?	Open
	Is the team aware of the project deliverables?	Open
	Have all the hardware and infrastructure requirements been finalized and addressed?	Open
	Does the project team need to be co-located?	Open

	Is everyone in the team aware of roles and responsibilities for everyone, including themselves?	Open
	Is the team aware of the benefits and business value of the project?	Open
	Is everyone in the team fully allocated to the project?	Open
	Is the project team comfortable with the requirements and their details?	Open
	Have you planned the resources required for the implementation?	Open
	Is everyone in the project team aware of the project deadlines?	Open
	Does the project team need to be co-located?	Open
	Is everyone aware of the defect management process?	Open
	Are you aware of the impact of systems shut down for implementation?	Open
	Do you need an implementation manager for the project?	Open
	Is there a way of checking the systems are production deployment and before the business starts?	Open
	Do you have a commitment from a business for testing resources?	Open
	Do you have a plan to update the system documentation after the project is complete?	Open
	Do you have a list of housekeeping tasks for the project?	Open
	Will the system need a User Manual?	Open
	Do you have a list of critical tasks?	Open
	Will there be a need for environment setup required?	Open
	Does everyone in the project team have the required hardware and software?	Open
Project Control Checklist	Is there a mechanism to track scope creeps and change requests?	Open
	Have you created a project change management plan?	Open
	Do you have a change request log and change request template?	Open
	Do you have a communication plan?	Open

	Is there a set of standard templates for project artifacts available?	Open
	How often do you review your project budget?	Open
	Do you need daily scrum meetings?	Open
	Do you have a detailed project schedule where the largest task is less than 5 days?	Open
	Do you have a defect management process in place?	Open
	What is the frequency of status reporting?	Open
	Do you have a project status report for weekly and/or monthly reporting?	Open
	Do you plan to conduct a monthly project team meeting?	Open
	Will the project need a project control members group?	Open
	Do you need to set up regular meetings with sponsors or the project committee?	Open
	Do you need all the resources on the project till the end?	Open
	Do you have a mechanism to manage the defect count in the project?	Open
	How will you track resource utilization in the project?	Open
	How do you plan to manage ongoing leave management for the team?	Open
	Was a risk assessment conducted for the project?	Open
	Is there a repetitive process to review the project risks?	Open
	How will everyone be aware of the project risks and issues?	Open
	Have you created a project risk and issue register?	Open
	What is your stakeholder management plan?	Open
	Will you be using a project management tool for tracking?	Open
	How are you tracking the project dependencies?	Open
	How are you tracking the project action items?	Open
	Do you the required tools to capture timesheets?	Open
	How do you plan to manage project issues?	Open

	Do you know who should be getting the project status report?	Open
Project Closure Checklist	Was an implementation review conducted?	Open
	Are all the project benefits still on track?	Open
	Will there be a closure document?	Open
	Have all the stakeholders authorized the project closure?	Open
	Are there any pending or open issues because of the project?	Open
	Do you have a list of lessons learned?	Open
	Have adequate arrangements been made for the handover of the new or updated systems/processes?	Open
	Has the project budget been finalized?	Open
	Are all the project resources released?	Open
	Have all the post-project activities complete?	Open
	Handover is complete for all deliverables?	Open
	All deliverables are accepted and signed off by the client?	Open
	Final project status reports are complete?	Open
	All financial processes and reports are complete?	Open
	Project review is done?	Open
	Staff performance evaluations and reports completed?	Open
	Staff employment on project terminated (no more work is done on the project)?	Open
	All supply contracts and processes are terminated?	Open
	Site operations and facilities used for the project closed down?	Open
	Disposal of all equipment and materials is done?	Open
	Communication: Announcement of completion of a project (internal, external, and public relations contacts)?	Open
	Completion of storage for all the project files?	Open

11. Develop a stakeholder register and form groups for them. (Competency 8)

To identify and develop a stakeholder register and form them into groups, first of all we need to classify the stakeholders according to the following classification:

11.1. Stakeholders Classification:

11.1.1. Internal stakeholders

Direct stakeholders are those directly associated or involved in the project. These include:

1. Client
2. Project sponsor
3. Project manager
4. Members of the project team
5. Technical and financial services providers
6. Internal or external consultants
7. Material and equipment suppliers
8. Site personnel
9. Contractors
10. Subcontractors
11. End users

They are also known as Direct stakeholders.

11.1.2. External stakeholders

Indirect stakeholders are those indirectly associated with the project, such as:

1. Support staff not directly involved in the project
2. National and local government.
3. Public utilities.
4. Licensing and inspecting organizations.
5. Technical institutions.
6. Professional bodies and personal interest groups such as stockholders, labor unions and pressure groups.

They are also known as Indirect stakeholders.

Reference:

<https://www.designingbuildings.co.uk/>

11.2. Stakeholders Mapping or Stakeholders Matrix:

Stakeholder mapping is a systematic approach to managing relationships with stakeholders to ensure that the positive impacts of stakeholders are maximized, and negative impacts are minimized, Table 10 shows a matrix identifying key stakeholders and their levels of importance or influence

Table 10: matrix key stakeholders and their levels of importance or influence

	Stakeholder Information					Evaluation				Stakeholder classification	
	Name	Position	Location	Role in the Project	Contact Information	Major Requirement	Expectations	phases of the project in which potential influences	internal or external	Supporter of the project or	
1	Client								internal		
2	Project sponsor								internal		
3	Project manager								internal		
4	Members of the project team								internal		
5	Technical and financial services providers								internal		
6	Internal or external								internal		

	consultants										
7	Material and equipment suppliers									internal	
8	Site personnel									internal	
9	Contractors									internal	
10	Subcontractors									internal	
11	End users									internal	
12	Support staff not directly involved in the project									External	
13	National and local government.									External	
14	Public utilities.									External	
15	Licensing and inspecting organizations.									External	

1 6	Technical institutions.									External	
1 7	Professional bodies and personal interest groups such as stockholders, labor unions and pressure groups.									External	

12. Develop the two networks: (Strength/Interest) and (Influence/ Strength)

12.1. Definition of power-interest grid:

A power-interest grid is a technique used to categorize stakeholders based on their power or influence and interest in a project. Before using the technique, you should identify all stakeholders involved in the project. You can identify stakeholders by looking at existing documentation, holding workshops, creating ‘as is’ business process maps and generally talking to people within the business.

12.2. Reason for using power-interest grid:

Categorizing stakeholders in this way can allow you to develop strategies to manage all stakeholders effectively. You may use your categorization to create a stakeholder communication plan. Stakeholders with high power and high interest will want to be engaged with regularly, whereas stakeholders with low power and low interest do not require regular and detailed communication (however, this does not necessarily mean that they should be ignored!).

12.3. Way to use power-interest grid:

You should create a grid or use a template. It is important to place the stakeholder where they actually are and not where they (or you) would like them to be. Once you have placed the stakeholder within the grid, you can look at which category they fall under and manage the stakeholder accordingly.

The complexity of the project will determine the detail to which you fill in the grid. For example, you might want to use more than the four positions shown below. For many projects, however, it is sufficient to consider the four categories below: Keep Informed, Maintain Interest, Actively Consult and Regularly Engage.

12.4. The Power/Interest Grid:

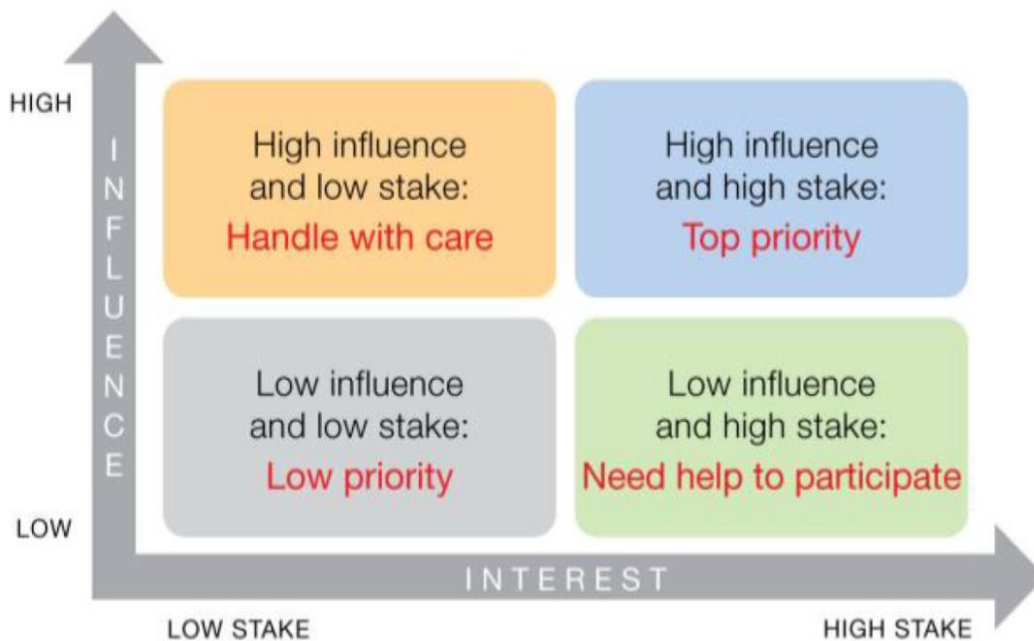


Figure 4: The Power/Interest Grid

The power/interest grid has an x axis for interest and y axis for power.

The grid is split into four quadrants, the bottom left is keep informed; the top left is actively consult; top right is actively engaging; and bottom right is maintain interest.

12.5. Difference between Power and Influence:

Power is capacity to get others to act based on positional authority that is exercised over others; often leading to resentment.

Influence is the ability to modify how a person develops, behaves, or thinks based on relationships and persuasion; often leading to respect.

12.6. Various Sources of power:

12.6.1. Legitimate: ability to request certain behaviors of others based on title, roles, or position (elected/ appointed)

12.6.2. Reward: ability to control the allocation of rewards valued by others and to remove negative sanctions

12.6.3. Coercive: ability to apply punishment (i.e., peer pressure) or take away items of value

12.6.4. Expert: ability to influence others based on the possession of valuable knowledge or skills

12.6.5. Referent: ability to influence others because the leader is admired and respected **12.6.6. Information:** ability to influence based on access to and control over distribution of information

12.6.7. Ecological: ability to influence how tasks are organized or the ability to alter the team's physical environment

12.7. Various Methods of Influence:

12.7.1. Least Effective:

1. **Exchange offer:** give something of value in exchange for something you want.
2. **Ingratiation:** get others to like (by flattery, agreement, helping) you so they comply with your requests **Personal appeal:** use relationships, common ground, and rapport to get something that you want.
3. **Coercion/Pressure:** use force (persistence or threats) to get someone to act.
4. **Coalition:** build an alliance of supporters to get others to act.
5. **Power/Authority:** use positional power or formal authority to get things done.

12.7.2. Most Effective:

1. **Persuasion (rational/logical):** present facts or lay out an argument emphasizing positive benefits related to a course of action.
2. **Inspiration:** link desired outcome to shared team values or ideals and model behavior to set an example for others.
3. **Consultation:** seek advice/input from others to encourage them to become more involved, committed, and motivated to take action.
4. **Collaboration:** offer support/ assistance or provide resources to gain commitment for completion of a desired task.

13. Logical diagrams for the register of the stakeholder.

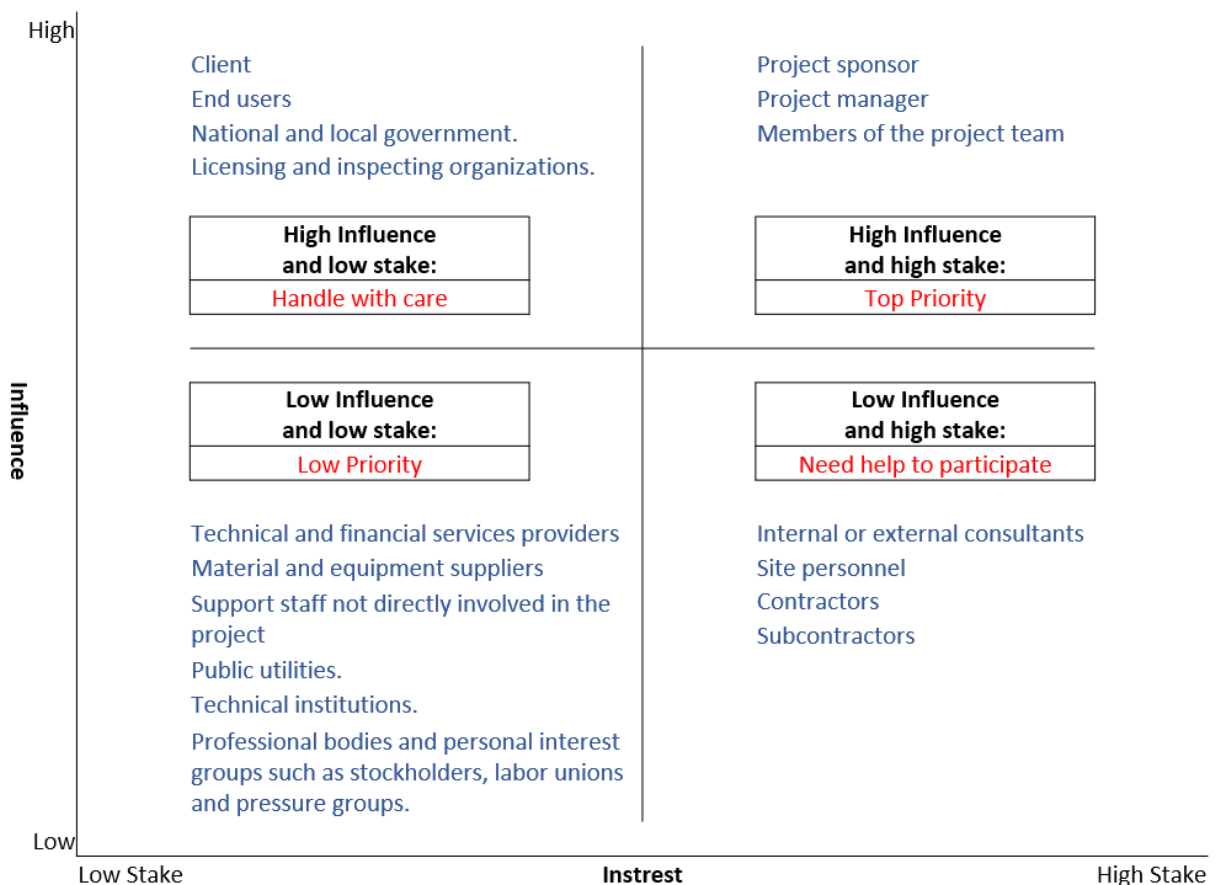


Figure 5: Logical diagrams for the register of the stakeholder

14. Identify the culture of the organization

14.1. Definition of the term organization culture:

The culture of the organization, known in English as (Culture Organization):
A set of rules that affect the behavior of individuals within a common work environment.

Also, can be define it as:

The moral values that characterize individuals who work together, and are keen to implement a specific system in organizing their work within the work environment, which helps them achieve the desired goals, and be able to develop a set of proposed solutions in the event they encounter problems while achieving the required goals, (San Cristóbal R., Fernández, V., Diaz, E. , 2018).

14.2. Characteristics of organizational culture:

Organizational culture is characterized by several characteristics, including:

14.3.1. It contains a set of elements that interact together in order to build a specific culture that is applied within the organization's environment, and this culture includes all means that help in promoting communication between individuals.

14.3.2. It is one of the means that help the administrative system in the institution; It promotes the idea of distributing experiences among individuals in an organized manner, which contributes to maintaining the implementation of work in a correct manner.

14.3.3. Continuity in the application of work, as it does not stop at the end of the official working day but continues to affect all internal and external components of the facility permanently.

14.3.4. Subject to development and change by adapting to modern developments, which contribute to providing many means that help in the growth of work, and the successful application of the concept of organization culture.

14.3.5. The ability to adapt to all the requirements of the work environment, which leads to reaching many results that are compatible with the nature of individuals and colleagues in the common work environment.

14.3. Importance of Organization Culture:

Organizational culture is important in many practical and professional fields in various work sectors, and this importance is summarized according to the following points:

- 14.4.1.** It is a clear and comprehensive guide for managers and employees, helping them to formulate a set of ideas that are commensurate with the nature of work in the institution.
- 14.4.2.** It helps in organizing the rules of behavioral dealings between employees within the same work environment, especially as it depends on the idea of applying cooperation between all colleagues at work.
- 14.4.3.** It is considered one of the tools for making administrative decisions in institutions.
- 14.4.4.** It is considered one of the factors that help in attracting qualified employees to work in the organization.

14.4. Types of Organization Culture:

There are many types of organizational cultures, including the following:

- 14.5.1** Mission culture: It depends on the distribution of tasks to employees at work.
- 14.5.2** Role culture: It is the culture that is concerned with following up the role of each department of the establishment, determining the nature of its impact on the work, and studying the extent of its effectiveness in performing its role in accordance with the rules and functional texts related to the culture of the organization.
- 14.5.3** Operations culture: It is the culture related to the nature of the means, tools, and work methods used in the implementation of operations. This culture is not concerned with the nature of the results that have been reached, but rather with the efficiency of the methods used to reach the results.

15. Proposals of the organization values that can be adopted.

organizational values reflect the mission and strategic goals of the organization. The organizations can be successful when organizational goals are aligned with organizational values and those are aligned with personal values of people who are this same organization. (Musek, I. 2006)

15.1. Proposal of an organizational culture model for innovation:

Organizational culture is important for innovation since the capacity to innovate demands a taste for risk and willingness to carry out entrepreneurship, which become stronger by an appropriate climate and environment that motivates individuals to create and develop new ideas. As our a company within the Engineering sector, the an organizational culture model for innovation is proposed.

In this project our vision is to make the building more energy-efficient as compared to the other similar buildings in the country and to obtain an Energy Star rating. The work's objective meant to design the proposal of an organizational culture for innovation model that favors adopting innovation for the development of house construction, and its introduction and exploitation to all cities of Saudi Arabia .

The component of organizational culture for innovation:

1. Strategy:

- Innovation lies within corporate philosophy and policies, which is clearly identified by all its members.
- The mission and vision show that innovation contributes to objective achieving.
- An approved and known innovation policy exists.
- Innovation included in strategic planning.
- Innovation indicators exist.
- The strategy rapidly adjusts to respond to changes.
- Strategic planning includes the clients' view.

2. Orientation toward the organization:

- The company plans its strategy based on deep understanding of its customers from interacting with them, their environment and reality
- The strategy adjusts reactively.
- The strategy involves the necessities of clients and external customers.

3. Organizational structure:

- Areas, procedures, functions and responsibilities are clearly defined in order to enable innovation management.
- The company counts with facilities and aids for innovation.
- An area leading innovation processes exists.
- Work teams are cooperative and autonomous
- Ideas may be easily manifested in hierarchies
- The members of the organization are aware of the activities performed by others
- Decisions are made participatively
- Work teams are heterogeneous

4. Communication and collaboration:

- Continuous usage of tools and channels to communicate the philosophy of innovation to the company
- There's open communication among areas
- There are external collaboration networks
- Results are communicated whether successful or failure
- Areas support each other without formal order

5. Leadership:

- Creates and organizational environment and climate where collaborators apply innovative thinking to solve problems and constantly generate new ideas
- Leaders promote dialog and motivate the search for improvement
- The company's leaders are clearly identified
- The leadership style shows it is possible to learn from mistakes
- The company has high leadership that dares to take risks

6. Organization's behavior:

- Members feel freedom to decide the manner to approach their tasks as well as to propose alternatives for improvement
- There is freedom to propose new ideas
- Collaborators communicate with people from different areas In the face of change people respond without direct orders from their supervisor
- Collaborators dare to experiment in order to improve their activities

7. Support mechanisms:

- There are programs, areas and projects to stimulate and reward the generation of new ideas that bring about innovation
- Innovation activities are led by an area
- Incentives exist to present new ideas
- Mechanisms to appraise new ideas exist
- There are resources to develop new ideas
- There is work team with knowledge for innovation activities
- The company offers learning and forming on innovation

8. Creativity in problem solving:

- The company promotes the usage of creative thinking to solve problems and generate new ideas
- I generate more than one alternative to solve a problem.
- I take into account long and short-term consequences when evaluating solution alternatives
- I use different methods instead of a single form of approachment
- I revert my initial form of understanding of the problems in order to consider whether the exact opposite is true
- I use some specific techniques to try and develop creative and innovative solutions
- I split the problem into small components and analyze them separately
- I help team members to find opportunities to work on their ideas even they're not in the fashion of their normal work tasks
- I make sure that there are divergent points of view in each complex problem-solving situation
- I encourage people to find new ways to approach a problem

15.2. Proposal of an organizational culture model for Embedding and Reinforcing Organisational Values and Behaviours

1. Recruitment:

Getting people in organizations who can live the values of our organizations ideally starts at the recruitment stage.

2. Induction:

Helping new colleagues understand and live the values can be done at every stage of induction.

3. Training:

every time a colleague spends time learning how to do something better provides an opportunity to reinforce our values.

4. Team meetings:

one of the best ways of living and reinforcing the values is when people are together. So, any team meeting, committee or group discussion can be use to focus on values.

16.Three personal behaviors of the student that can influence on the project.

The projects are considered successful only when they are completed within the boundaries of scope, time, cost and quality. People behaviour is one of the key factors that drive successful project management.

The project managers deliver projects perfectly, when he/she following a rule book, using project management software, firefighting problems, implementing the concepts from PMBOK etc (PMBOK,2007). In addition, His/her ability to manage the thousands of interactions people have within the project and outside of it (environmental factors). The emotional bonding between individuals must be well understood and recognized to get the best out of the people. This ultimately is crucial for achieving proper level of teamwork, communication and performance that is needed for successful project management. Human behaviour can have either positive or negative outcomes depending on the context. (Katarzyna Piwowski, S., 2014)

There are some personal behaviours of the student that can influence on the project as following:

- Lack of commitment:
- Poor time management
- Poor communication
- Interpersonal skills such Procrastinating

- Lack of commitment:

The work commitment is important, one of the most important reasons it allows an organization to meet its goals and stick to its vision. Many individuals fear commitment and will struggle with situations that require them to establish a long-term connection or obligation to another person.

People with commitment issues or commitment phobia experience great levels of anxiety in relationships. The commitment challenges they face can take a great toll on both parties in the relationship.

- **Poor time management**

the most common signs of poor time management the following:

Stress: Poor time management causes us to always be in a rush, which results in a lot of additional stress.

Always being late. Poor punctuality is one of the most frequent problems caused by bad time management. Time slips away easily, but being late makes people perceive you as unreliable.

Ruining your professional reputation. No one's ideal coworker is someone who's always late and doesn't respect deadlines. Most people understand if it happens once and you have a good reason, but if you have no concept of punctuality whatsoever, you'll be labeled as unprofessional.

Low productivity and poor quality of work. This lead to negatively affects on performance and results.

Poor work-life balance

- **Poor communication**

Poor communication often occurs when there is a discrepancy between what is said and what is heard. In other words, the person being communicated to misunderstands.

Overall, good communication is the effective sharing of information, meaning, thoughts and feelings between people

- **Interpersonal skills such Procrastinating**

17. Study such behaviors, identify their reasons, and how they can be eliminated.

1. Lack of commitment:

Reasons: Lack of communication and appreciation for what they do.

Solution: to overcome these obstacles is to seek external help, whether it's in the form of individual coaching or a dating problems workshop.

In order to combat this, the managers must be actively communicating with staff, letting them know what they are doing is positively or negatively affecting the company's bottom line.

Regularly sharing the goals and vision of the top executive team.

Communicating with employees how their job affects these top goals, by bringing to their attention how their specific actions have positively or negatively affected the company's bottom line.

Praising employees when their actions help improve the bottom line, allowing them to feel appreciated for their efforts.

Recognizing when employees don't see the importance of their job, without guidance these uncommitted people can only drag you down

2. Poor time management

Some of the causes for poor time management are:

Physiological

Research on the physiological roots of poor time management mostly surrounds the role of the prefrontal cortex. This area of the brain is responsible for executive brain functions such as planning, impulse control, attention, and acts as a filter by decreasing distracting stimuli from other brain regions. Damage or low activation in this area can reduce an individual's ability to filter out distracting stimuli, ultimately resulting in poorer organization, a loss of attention and increased procrastination.

Solution:

- Perfectionism:

It is a belief that perfection can and should be attained. In its pathological form, perfectionism is a belief that work or output that is anything less than perfect is unacceptable. It can take the form of procrastination when it is used to postpone tasks, and self-depreciation when it is used to excuse poor performance or to seek sympathy and affirmation from other people.

In the workplace, perfectionism is often marked by low productivity as individuals lose time and energy on small irrelevant details of larger projects or mundane daily activities. This can lead to depression, alienated colleagues, and a greater risk of workplace "accidents." Adderholt-Elliott (1989) describes five characteristics of perfectionists which contribute to underachievement: procrastination, fear of failure, the all-or-nothing mindset, paralyzed perfectionism, and work a holism.

- Low motivation:

This is one main reason what causes procrastination. The task at hand is not motivating to us, as it does not match our aspiration. When a task is not meaningful to us, we drag your feet in completing the task. Many a times the task may never be completed.

- **Poor delegation of work:**

Sometimes employees find themselves getting bogged down in routine operational tasks, which leave them no time for the vital managerial functions like long term planning and development.

Successful delegation involves giving someone else the responsibility to perform a task that is actually part of our own job. It always carries with it an element of risk, since we are assigning to someone else work for which we retain the ultimate responsibility.

People may feel that any sign of weakness reduces their standing in the eyes of others, and themselves. This may hold them back from asking for help. They may also refrain from delegating work to others due a fear that someone else will do a better job and take the credit

- **Unassertiveness:**

Saying 'yes' to requests for our time is not always a bad practice. The problem occurs when we say 'yes' to almost any request no matter what it is, who is asking, or how much work we already have on our plate. Always saying 'yes' is a major source of overload and stress, and it can lead us away from our priorities into less important tasks. If we want to avoid the work and stress associated with attempting too much, we need to decide carefully whether to accept new tasks.

- **Impatience:**

Some people find it difficult to keep focusing and completing a task at one go. Instead, they attempt different things and as a result, they do not complete the tasks successfully. Even when it comes to the family life of the employees, sometimes they find it difficult to patiently fulfill the needs of their family members such as spend time at a vacation.

- **Chronic vacillation between alternatives:**

Some people keep thinking of the advantages and disadvantages of the options so much that they find it difficult to arrive at a choice. This many a times lead to procrastination and also ends up in putting up a poor performance.

- **Evaluation anxiety:**

Some people want to impress others so much that when given a task they feel so much pressure that it delays their work. They are too anxious about other's opinion of their work.

- **Doing Things Totally New:**

This is a common cause of procrastination for many who have just started their career. When employees are asked to embark on a totally new project and they have no idea at all on how to tackle it, the first reaction is to procrastinate. The uncertainty of how to carry out the task and its results causes them to delay commencing the project.

- **The lack of confidence:**

Another common cause of procrastination is the lack of confidence in completing a task. It can be real that you lack the skills but sometimes it may be a perception that you lack the skill. Because of this you may totally avoid completing the task.

- **Management by crisis:**

Management by crisis is a phrase used to describe the common problem of allowing unexpected events, interruptions, problems, or emergencies to dictate your priorities and actions. Sometimes we do need to react quickly to a crisis and contain it before it does more damage. The problem comes when crisis management becomes the routine rather than the exception. When crisis management becomes the routine, it can easily lead to urgency addiction.

People that are addicted to urgency enjoy putting out fires, they like stepping in and solving problems, and their bosses often reward them for doing so. They have no incentive to avoid or prevent the fires because they get a payoff every time, they put one out.

3. Poor communication

Reasons: langue

Solution: training, education

18. Self-professional assessment by using SWOT model

18.1. Introduction:

Overall, the modern organizations should develop long term strategies in the face of an increasingly dynamic and competitive world. So that the company needs to develop a competitive strategy in order to achieve competitive advantage in a market economy (Dyson, R.G.,2004).

SWOT analysis has been in use since the 1960s as a tool to assist strategic planning in various types of enterprises including those in the construction houses, (Lu, W, 2010).

18.2. SWOT Matrix Definition:

SWOT Analysis is a strategic management tool helps an organization to identify the internal strategic factors and external strategic factors to determine its competitive position in the market, the internal organizational factors as strengths and weaknesses and the external situational aspects as opportunities or threats (Tamošaitienė, J and Gaudutis, E, 2017). SWOT stands for Strengths (S), Weakness (W), Opportunities (O) and Threats (T), These are explained in figure 1: (Amer, S, 2020)

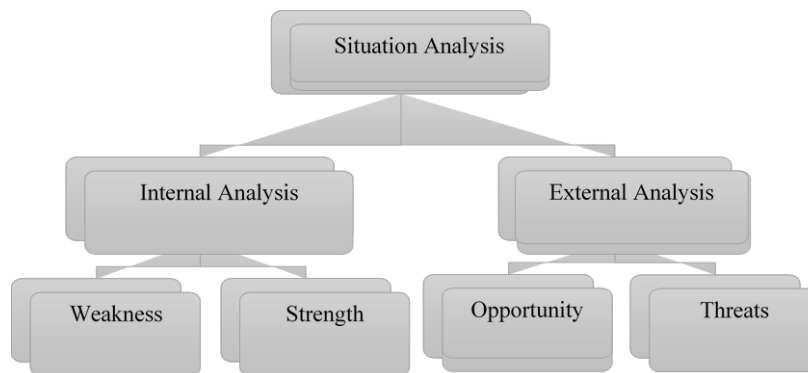


Figure 6: Situation Analysis of SWOT

The internal analysis is used to recognize resources, capabilities, core competencies, and competitive benefits inherent to the organization. The external analysis recognizes market opportunities and threats by looking at competitors' resources as presented in figure 2, (Sammut, T and Galea, D, 2015).

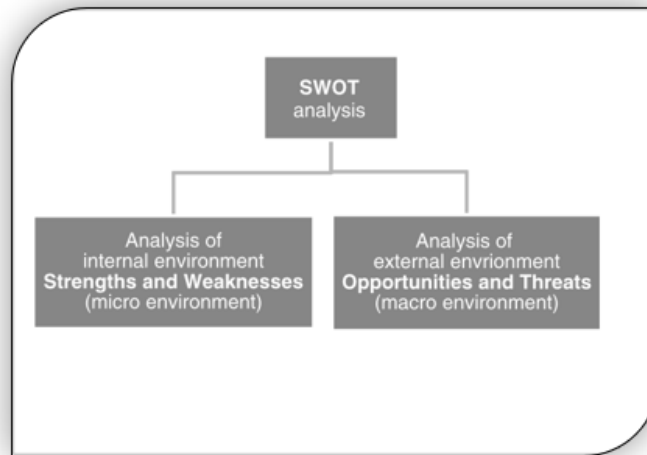


Figure 7: SWOT analysis main components

18.3. SWOT Strengths, Weaknesses, Opportunities and Threats:

18.3.1. Strengths: The strengths of organization are the core competencies, in which the business has an edge over its rivals.

18.3.2. Weaknesses: Weaknesses can be understood as the areas of limitations of the business, that hinders the growth of the organization and even leads to a strategic disadvantage. These are the areas which require improvement to perform competitively.

18.3.3. Opportunities: Opportunities can be identified as the condition, which is beneficial to the organization in the business environment, that the business could exploit for the achievement of advantages.

18.3.4. Threats: the adverse external factors and events that may interrupt the business from achieving its goals, such as supply-chain problems, market problem, or a shortage of recruits, (Lu, W, 2010).

18.4. SWOT Matrix Strategies Objective:

The primary objective of SWOT matrix is the following:

18.4.1. To identify the strategies that an organization can utilize to exploit external opportunities, counter threats, and build on and protect the company strengths, and eradicate its weaknesses.

18.4.2. The SWOT Analysis helps in ascertaining the factors that influences the efficiency and effectiveness of any product, project, or business entity.

- 18.4.3. To help decision makers share and compare ideas
- 18.4.4. To provide linearity to the decision-making process allowing complex ideas to be presented systematically

18.5. Who needs SWOT Analysis?

18.5.1. Management:

- 18.5.1.1. When manager has issues with work output
- 18.5.1.2. Assigned to a new job
- 18.5.1.3. New financial year – fresh targets
- 18.5.1.4. Job holder seeks to improve performance on the job

18.5.2. Business Unit:

- 18.5.2.1. When the team has not met its targets
- 18.5.2.2. Customer service can be better
- 18.5.2.3. Launching a new business unit to pursue a new business
- 18.5.2.4. New team leader is appointed

18.5.3. Company:

- 18.5.3.1. When revenue, cost & expense targets are not being achieved
- 18.5.3.2. Market share is declining
- 18.5.3.3. Industry conditions are unfavorable
- 18.5.3.4. Launching a new business venture

18.6. Step of Conduct SWOT Analysis

- 18.6.1. Analyze Internal & External Environment
- 18.6.2. Perform SWOT Analysis & Document
- 18.6.3. Prepare Action Plans

18.7. Benefits of SWOT Analysis:

- 18.7.1. It is a source of information for strategic planning and setting of objectives for strategic planning.
- 18.7.2. Provides a framework to identify & analyze the strengths and weaknesses of organization.
- 18.7.3. Provides a motivation to analyze a situation & develop suitable strategies and
- 18.7.4. Builds organization's strengths.
- 18.7.5. Reverse its weaknesses.
- 18.7.6. Exploit its response to opportunities.

- 18.7.7. Overcome organization's threats.
- 18.7.8. It helps in identifying core competencies of the firm.
- 18.7.9. It helps in knowing past, present and future so that by using past and current data, future plans can be chalked out.

18.8. Limitations of SWOT Analysis:

Even though the SWOT Matrix is broadly used in strategic planning, the analysis does have some limitations. (Datta, K. and et al, 2014)

- 18.8.1. Certain capabilities or factors of an organization can be both a strength and weakness at the same time. This is one of the major limitations of SWOT analysis .
- 18.8.2. SWOT does not show how to accomplish a competitive benefit, so it must not be an end in itself.
- 18.8.3. The matrix is only a starting point for a discussion on how proposed strategies could be implemented. It provided an evaluation window but not an implementation plan based on strategic competitiveness of company
- 18.8.4. SWOT is a static assessment

18.9. SWOT Analysis of our company

SWOT analysis is an extremely interactive procedure and requires effective coordination among several departments within the company such as – marketing, finance, operations, management information systems and strategic planning. (Milosevic, IN, 2010). When creating SWOT analysis, always start with a new set of strengths, weaknesses, opportunities and threats. Occasionally, an issue that is a threat in one project.

Table 12 shows the main strengths, weaknesses, opportunities, opportunities and threats for company ((Flanagan, R, 2007) (W.S., Li, and et al, 2009))

Table 11: SWOT analysis list

Company Name: Company Inc.		Date: 10 Oct 2021
Strengths		
1	Advanced Project Management	
2	Workforce Stimulation	
3	Knowledge of the Subcontractor	
4	Modern Technology	
5	Use of Modern Machinery	
6	Skillful Work Team	
7	Strong financial condition	
8	A large customer base.	
9	unique product	
10	Cost Advantage	
11	Quality in product and customer service	
12	Plenty and cheap construction materials available	
13	Particularly specialized in housing/office buildings	
14	Reputation	
15	Strong design and construction capacity	
16	Profits from multiple portfolios	
Weaknesses		
1	Inexperienced Workers	
2	Resistance to New Methods of Working	
3	Lack of Coordination	
4	Possibility of Injury at Work	
5	Undeveloped Relationship with the Subcontractor	
6	Obsolete facilities and outdated technology.	
7	The unit cost of a product is higher than the competitors.	
8	No or less internal control.	
9	Less quality in products and services offered.	
10	Weak brand image.	
11	Financial condition is not very sound.	
12	Underutilization of plant capacity.	
13	Lack of major skills or competencies, and intellectual capita	
Opportunities		
1	Domestic construction market is still going strong	

2	Favorable Contract Terms	
3	Increasing collaboration and partnering amongst international competitors	
4	Reliable Investor	
5	Favorable Financing Arrangements	
6	Possibility of Developing a Well-Coordinated Project Team and Project Management Strategy for Future Projects	
7	Looking for areas of development, by utilizing skills and technology to enter new markets	
8	Adding new products to the existing product line to increase customer base.	
9	Forward and backward integration.	
10	Acquiring rivals' businesses.	
11	Joint ventures, mergers, and alliances to increase market coverage.	
Threats		
1	High Level of Groundwater	
2	Small Area for Storage and Manipulation on the Construction Site	
3	Supervisory Board with an Interest in the Project	
4	Repeated Changes in Allocation of Space	
5	A downtrend in market growth.	
6	A new entrant to the market.	
7	Substitute products that can decrease sales.	
8	Increasing the bargaining power of customers and suppliers.	
9	New regulatory requirements	
10	Changes in a demographic environment that will decrease demand for firm's product.	

19. Three behaviors contradict the moral integrity.

19.1. Defining Integrity:

It is the integrity and moral values that the individual possesses, such as honesty, honesty, transparency, honor...etc.

It can be defined as:

Generosity in the morals that must be characterized by a person regardless of his age, such as fighting corruption and holding fair elections free of fraud, and justice and equality...etc.

19.2. Integrity types:

19.2.1. Intellectual integrity:

It is the movement of thought or the movement of thought, to rise above the sin of the people and to deceive and deceive people, in the field of thought or through misleading phrases, sentences and generalizations.

19.2.2. Integrity at work:

Integrity is considered a characteristic of leadership, which is honesty, sincerity and transparency in work, and integrity in the workplace is very important, because these traits promote a positive workplace culture and level, where there is open communication, good decision-making and a strong moral compass that guides all decisions and actions, while Irresponsible behavior and a lack of confidence can make the work environment uncomfortable and stressful.

If an employee is known for his integrity then he will be worthy of trust and respect from the people around him, since integrity is not only important on a personal level, but also vitally important at the workplace level, and organizations known for their integrity work better than others.

19.3. 3 behaviors that are incompatible with moral integrity:

19.3.1. Stealing:

it is the taking of another person's property without the permission or consent of that person with the intent to deprive him of his property and use it for the purpose of ownership.

It harms the interests of others, whether private or public health.

Such as stealing money, ideas, or even efforts made by other people to accomplish a particular task.

19.3.2. Procrastination:

It is postponing the performance of tasks or postponing the implementation of projects to another time for flimsy pretexts and made-up excuses or doing a less important task instead of accomplishing the most important task.

Example: Evasion of debts and financial obligations to others with the ability to repay.

19.3.3. Lying:

It is not telling the truth and telling the opposite of reality

Examples:

1. include not telling the truth about the status of the project if it is about to be completed or stumbled
2. Giving promises of promotions to employees and not keeping them.

20. Analyze the financial, social, and technical influence, if any, of such behaviors on the works of the project and the relationships.

20.1. Stealing:

Theft within the workplace, no matter what is stolen, will undoubtedly have financial implications for business owners

The amounts are large and can often lead to the bankruptcy of a company depending on the scale of theft or may cause a shortage of resources and thus delay in the delivery of the project which affects the relationship with the client

This thing can be controlled by neutralizing its causes, such as allocating cash flow with people directly involved in financial dealings and keeping records for this.

20.2. Procrastination:

Delaying work or postponing its implementation may lead to the impact of the schedule or the depletion of the project budget or the need to increase the project budget and thus the tendency to use the financial reserve for emergencies or the need for additional resources

20.3. Lying:

For example, lying about job qualifications directly affects the project, as this increases the risk when assigning the work to an incompetent person to complete the work, or he may complete it incorrectly, and this leads to the re-work or correction, and this affects the work costs and schedule

Another example is the devious methods of giving employees promises of promotions or a salary increase, as this affects the example of correct leadership and turns the leader from a leader to an ineffective leader and leads to the team's lack of confidence in the decisions or promises of their leader.

21.Register of the stakeholder.

The main stakeholders involved in this project are the project manager, contractor, and supplier. Other stakeholders include Menefah Alanazi from the local government construction office, Sustainability Expert Abdulrahman Qaramsh, and Chief Architect Mushari Alzaidi. Sustainability Expert will make sure that our construction activities are in line with green buildings guidelines and that we achieve the Energy Star rating on this project.

The project manager will closely work with the house owner and act as a representative of our construction company to oversee the whole project including the progress of the project and ensure resources are well utilized, and delivery meets time and also ensure the result are to the intended satisfaction. The project manager is distinguished to ensure the project remains within the budget along with its specifications and the manage the other project stakeholders as well to ensure the project is successfully met through the initiation, the planning process, and the execution of the project. The supplier or the vendor will be the Seif Suppliers who will ensure that all the materials needed at the site are delivered on time upon payment. Seif Suppliers are answerable to the project manager who answers to the owner of the property.

Table 12: Team member

Name	Title	Organization
Hattan Sabban	Project Sponsor	House Owner
Hassan Alhirafy	Vendor	Seif Suppliers
Mohammed Alsati	Project Manager	Unique Builders
Mushari Alzaidi	Chief Architect	Engineering Department
Abduarhman Qaramsh	Sustainability Expert	Green Co.
Menefah Alanazi	Local Authority	Construction Government Office

22. Personal communication and the effective communication.

Personal communication Personal communication is defined as communication that occurs for the purpose of communicating personal information, thoughts, and feelings. Personal communication may include emails, interviews, chats, and other media. Effective communication is necessary for personal communication (Emmitt, S., & Gorse, C., 2006). Effective communication can be defined as the communication between two or more individuals where the message is effectively conveyed so that it is understood by all the recipients. To be an effective communicator, you must be able to listen carefully as well as convey yourself clearly to others around you. **Effective communication** needs a wide range of abilities, including both verbal and nonverbal clues, as well as close listening. Effective communication is essential both in and out of the job because it helps you to properly transform your goals and sentiments into messages that are readily understood. Perhaps the most crucial life skill is the ability to communicate effectively. It is what allows us to communicate with others and understand what is communicated to us.

More than merely exchanging information is required for **effective communication**. It is necessary to comprehend the emotion and purpose underlying the information. In addition to being able to properly express a message, you must also be able to listen in such a manner that you grasp the entire meaning of what is being said and make the other person feel heard and understood. Nonverbal communication should support, not contradict, what is being communicated. If you say one thing but your body language suggests another, your audience will likely suspect you of deception.

Communication that is clear and concise develops trust in others. Your ability to listen carefully and accept diverse points of view gives others confidence that you are making the best judgments for everyone in the group. As you act as a role model, this trust will spread to your team, and they will feel confident in their teammates' ability to carry out their tasks and obligations. The capacity to effectively communicate has a significant influence in resolving disputes and avoiding prospective conflicts from forming. The goal is to be cool, make sure all sides are heard, and come up with a solution that works for everyone.

23.The shapes, models, and channels of the personal communication.

The project manager will meet with the project owner on a monthly basis to discuss the project's progress. Daily and weekly meetings with the contractor and supplier will be held as needed, with at least one meeting every two weeks. Here are several methods and mediums used for communication in our team and at our workplace:

1. Video messaging.
2. Direct messaging.
3. Email.
4. In-person Meetings.

23.1. Definitions:

23.1.1. Video messaging:

For improved collaboration with long-distance or remote personnel, our company employs video messaging services. Because the applications display people through video, they are frequently chosen over phone calls. In comparison to a phone conversation, video conferencing enables a more personal and private encounter for discussing sensitive information with a faraway contact.

23.1.2. Direct messaging:

Our company also offers its employees instant messaging software. These tools enable people to communicate with each other directly throughout the day, making organizational communication quicker and more efficient. These applications provide both one-on-one and group communication. Furthermore, these applications enable real-time interactions without the latency associated with email responses.

23.1.3. Email:

Email is the sending and receiving of messages via a virtual mailbox. Email is used in our business for both internal and external communication. Once an email has been sent, it cannot be edited or altered in any way, demanding careful editing of each message.

23.1.4. In-person:

In-person meetings are our company's preferred communication channel. In-person communication entails conversing with one or more people face to face. Depending on the circumstances, in-person contact is frequently more valuable than internet communication. No one, for example, hides behind a computer screen when conversing in person. This frequently fosters more open conversation. Furthermore, with in-person contact, all parties interact directly with one other without delay or dependency on technology.

To communicate effectively, one must understand and be understood. Knowing the proper communication strategies is just as crucial as having great communication abilities. Our company utilizes visual communication via images, charts, graphs, and maps during project status reports. The type of content in the status reports depends upon the audience. Higher management is more interested in visual aids because they don't have the time to read lengthy reports. For communicating with line managers both written and visual aid are employed depending upon the scenario or information at hand.

24. The communication matrix.

A communication matrix is just a convenient technique to keep important stakeholders informed. It includes details such as project owners, deadlines, project status, objectives, and so on. It contains a list of all stakeholders, their preferred communication channels, and frequency of communication.

The first stage in developing your communication strategy is determining what type of communication your stakeholders require from the project in order to make sound choices. This is referred to as the communication needs analysis. Stakeholder analysis assists you in determining who to communicate with and why. Once you've clarified your objectives and gained a thorough understanding of the various audiences with whom you must communicate, it's time to plan your message, that includes determining everything you need to say or write in order to meet your objectives, and also when and

how these communications will be conveyed. Our project communication matrix is shown below:

Table 13: The communication matrix

Stakeholders	In-Person Meeting	Direct Messaging	Video Messaging	Email
Project Sponsor	Monthly	As required	As required	Weekly
Vendor	Weekly	X	X	As-required
Chief Architect	Project Start, then monthly	As required	As required	Monthly
Sustainability Expert	Project Start and weekly	Weekly	X	Weekly or as required
Local Authority	Project Start	As required.	X	As required

25. Three wrong scenarios of communication.

1. Unclear communication channels

Our company and project team has invested time and effort in creating clear communication channels that foster employee trust. Employees and employers that have a high level of confidence in each other have higher morale and overall productivity. Teams collaborate more effectively, and managers are more forthcoming about future changes that may affect their teams. When an employee wants something handled, rather than going through the chain of command, they send a direct message to the right individual, resulting in a quick response. This eliminates wrong communication scenarios.

2. Sending right information to wrong individuals and vice versa

Our organization conveys messages through a wide range of communication methods and channels, and we have already listed them above. The project manager has to make certain that all text is well-written and devoid of grammatical mistakes. He must allow any written communication to be seen by other team members before sending it. Allowing people to review his work enhances the likelihood of detecting and correcting even minor faults. Sending the right information to the right audience and keeping their communication needs in mind will ensure that wrong communication scenarios are avoided.

3. Using wrong communication channels

In-person communication is typically more successful than phone or email communication, depending on the message, and is the preferred communication channel for our company. Understanding when to employ the various modes of communication is critical to the success of a company's overall communication. Email is ideal for sending non-sensitive information. Video conversations are frequently the most efficient way of dealing with a difficult problem that has already resulted in the spread of misinformation. When presenting sensitive material, an in-person approach in a private environment, such as an office, is preferable. In-person communication and using proper body language minimizes the chances of wrong messages delivery.

4. Risks of oversharing information

While our company benefits from openness, the idea of oversharing still necessitates caution. Oversharing sometimes results in gossip or the transmission of sensitive or improper information. The project manager must consider the necessity and significance of workplace secrecy. For example, hold sensitive information meetings in a private and secure office, avoid incorporating confidential material in emails, and discourage gossip or other improper communication as needed. This will also limit wrong communication scenarios.

26. Develop and prepare stakeholder assessment matrix.

Stakeholder Analysis is the first stage in Stakeholder Management, which is a critical technique used by effective managers to get support from stakeholders (Scheffran, J., 2006). Stakeholder management may assist a manager in ensuring that his projects succeed when others may fail.

Stakeholder Analysis is the first stage in Stakeholder Management, which is a critical technique used by effective managers to get support from stakeholders. Stakeholder management may assist a manager in ensuring that his projects succeed when others may fail.

Stakeholders are the people who have a vested interest in your project. They may be powerful advocates or opponents of your ideas, so you must determine who your stakeholders are and win them over as quickly as feasible. This may be accomplished by completing a Stakeholder Analysis, a three-step method for identifying, prioritizing, and comprehending your stakeholders.

Stakeholder Analysis consists of three phases. To begin, determine who your stakeholders are. Next, determine their authority, influence, and interest so you know who to target. Finally, have a thorough grasp of the most essential stakeholders so that you can predict how they will react and how you may gain their support. The stakeholder assessment matrix for our project is shown below.

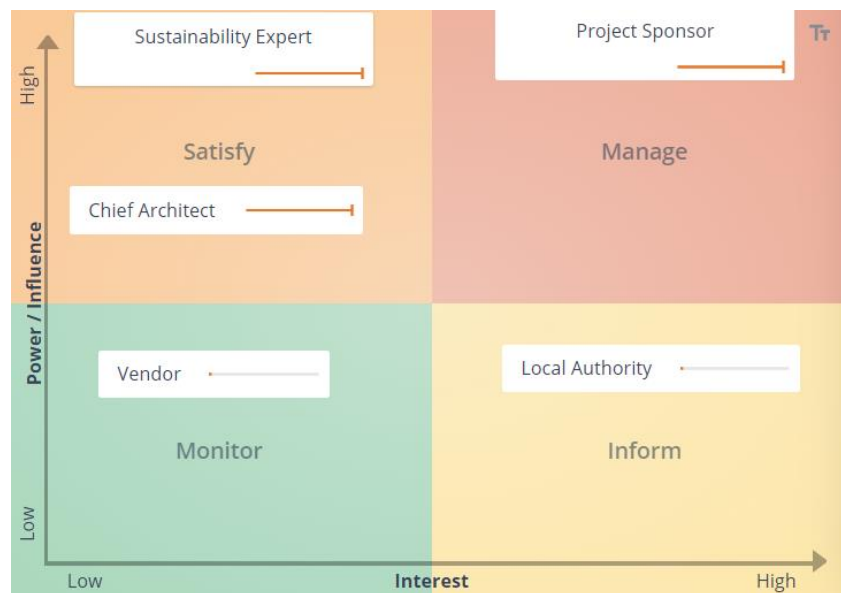


Figure 8: stakeholders assessment matrix

27. Describe and identify the leadership model, which is preferred to the project leadership.

27.1. Introduction:

leaders play a pivotal role in leading their followers to fulfill organizational desired goals effectively. A leader can be defined as a person who delegates or influencing others to act to carry out specified objectives, (Mullins L., 2004).

Today's organizations need effective leaders who understand the complexities of the rapidly changing global environment. If the task is highly structured and the leader has good relationship with the employees, effectiveness will be high on the part of the employees.

Different leadership styles is a leader's approach to providing direction, implementing plans, and motivating people, and may affect organizational effectiveness or performance (Nanjundeswaraswamy, T. S. and Swamy D. R., 2015)

Leadership is a social influence process in which the leader seeks the voluntary participation of subordinates to reach organization goals, (Omolayo, B.,2007).

27.2. Leadership Styles:

27.2.1. Affiliative Leadership Style:

This leadership style focuses on conflict resolution and creating personal connections between employees and their managers to build a sense of community and trust

27.2.2. Authoritarian / Commanding / The Boss/Autocratic Leadership Style:

- is centered on the boss. the leader holds all authority and responsibility.
- The leader centralizing decision making, and limiting participation.
- leaders make decisions on their own without consulting subordinates. They reach decisions, communicate them to subordinates and expect prompt implementation.

27.2.3. Coaching Leadership Style:

- involves teaching and supervising followers.
- A coaching leader is highly operational in setting where results/ performance require improvement.
- Basically, in this kind of leadership, followers are helped to improve their skills.
- coaching leadership does the following: motivates followers, inspires followers and encourages followers

27.2.4. Democratic Leadership Style

- In this leadership style, subordinates are involved in making decisions. Unlike autocratic.
- This leadership is centered on subordinates' contributions.
- The democratic leader holds final responsibility, but he or she is known to delegate authority to other people, who determine work projects

27.2.5. Laissez-faire Leadership Style

- Laissez-faire leadership gives authority to employees. (LEAVE IT BE)
- Subordinates are allowed to work as they choose, with complete freedom to make decision. with minimal or no interference.

27.2.6. Pacesetting Leadership Style

- Pacesetting leadership is when the leader sets an example of high performance, high pace and high quality.
- Team members are expected to follow suit, and the pacesetting leader values results more than anything.

27.2.7. Transformational / Visionary Leadership Style

- The transformational leadership style is one of the most implemented styles. It has integrity, defines clear goals, encourages clear steps to communication and expressive.
- This type of leader inspires their team to work together towards a common target.
- Transformational leaders combine the best practices and are leaders who are trusted and can motivate others.

27.3. Preferred Model:

Autocratic leadership style (AL) places more emphasis on performance and low emphasis on people.

The focus of power is with the leader and all interactions within the group move towards the leader. The leader unilaterally exercises all decision-making authority by determining policies, procedures for achieving goals, work task, relationships, control of reward, and punishment (Van Vugt et al., 2004).

The basic assumption underlying autocratic leadership style is based on the premise that, people are naturally lazy, irresponsible, and untrustworthy and leaving the functions of planning, organizing, and controlling to subordinate would yield fruitless results and so such functions should be accomplished by the leader without the involvement of people.

Further, Likert's (1961) four management systems, characterized autocratic leadership style system as an exploitative-authoritative system where power and direction come from the top downwards, where threats and punishments are employed, and where communication is poor and team-work is non-existent.

Jung, Jeong and Mills (2014) described an autocratic leadership style on a continuum and opined that autocratic leaders make decisions and announce them, without inviting suggestions from subordinates.

Autocratic leader relies heavily on authority, control, power, manipulation and hard work to get the job done (Puni et al., 2016).

In the autocratic leadership system, formal centralized structures, procedures, processes and mechanism are clearly defined and are enforced to ensure that subordinates do their jobs efficiently within the rules.

- Punishments are often applied when mistakes are made and sanctions are in the form of withholding attention or good assignment or making people feel guilty.
- Motivation under this leadership style is by the means of economic incentives which are extrinsic in nature and based on performance.
- Development within an autocratic system comes from hard work and rarely does delegation of authority practiced.

Most theorists have identified autocratic leaders with authoritarian leaders simply because research has proven that there is a strong positive correlation between autocratic leadership style and authoritarianism (Chemers, 2014; Schuh, Zhang, & Tian, 2013; Svolik, 2013).

28.Reasons for which such model is preferred.

1. Leader like this can achieve results quickly.
Project such house building needs autocratic leader that's drive results fast and good quality.
2. Quick decision making.
This project needs fast decisions during process that's insure achieving results matching with time gone.
3. Focused target.
Assertive leader focused on his target in professional way that's drive expected results in the right time.
4. Close supervision.
Autocratic leaders following up them subordinate's closely to make sure all process on track and Rapid intervention to solve any pending.
5. Maintain order and disciple.
6. Good for emergencies/crisis situations.

Autocratic leaders feature as decision making and fast response its ideal model for emergencies and crisis that's depends on fast solutions.

29.Five proposals for the motivation methods that are compatible with the nature of the project.

29.1. Introduction:

motivation) leaders need to communicate with their employees thoroughly, and manage human capital, finance, and marketing wisely. In simple terms, leadership is a process by which an individual motivates or influence others to achieve organization goals (Kesting et al., 2016). It is the process of enhancing and encouraging the self-esteem of employees to achieve organizational task and goals. Employee motivation is a way to achieve unusual goals, in which they put effort above and beyond stated organizational goals.

Comprehensively speaking, employee motivation is the extent to which employees are bound emotionally or psychologically towards the organization (Anitha, 2014).

Coordinating and delivering projects is the most important things in any project.

Meeting the timelines of a project is one thing, but choosing ways to motivate and inspire the team is something important

A successful Leader in all field should know the proper ways to motivate and inspire the team. It is most important to keep the team not only go through motions but ensure that the want to get things done and done perfectly.

Following are proposal to be used for motivation:

1. Big things and small things to be celebrated:

Honor your team when accomplishing a job and doing it well. The team which is recognized in the company or when a project finished.

A good idea to financially incent. This will move your team to put the best of their efforts to do their work.

2. reward after a hard-working day:

working for long hours deserves a treat and this will reflect on the behavior of the team. Leaving work early or coming the next day late a bit. Taking the team to celebrate for dinner or having coffee will be an advantage to gain their trust always.

3. Engage with your team always:

Be aware of what is the team working on and toward what they are moving, guide, direct, correct and appreciate.

Answer the questions of the team will reduce the miss understanding the scope

The team will feel motivated and on track with the presence of their leader and his support.

4. Don't take advantage of your team

Let the team lean on you sometimes if you can give supports considering yourself as part of the team and doing a task, even that takes more time. Just because one task might be menial does not mean that you are not capable of doing it.

5. Keep a relaxed and comfortable atmosphere

Do not expect to have a productivity in a bad atmosphere in the working environment. Even through the stress, the support for your team is something appreciated and valuable. Keep the stress away so that will not affect the team. Some stress can be positive when a deadline needs to be met, but too much of that may go to the opposite side of the comfort zone.

6. Team, are people too:

Every part of the team has family and personal issues have to deal with. Thus, while work is extremely important, you must acknowledge that they have a personal life as well

Convey a message to your team that you care about them and their well-being and support them when they are going through any difficulties, in or out of work

7. Leading by example:

The team should take you a model for their work. For sure that the team are giving an eye on you, so you need to be a good example always.

Your behavior is paramount, so you always want to execute admirable behaviors to gain the respect you deserve and keep your team in line and motivated.

8. Grow and grow your team:

The skills that your team have, take advantage and allow each team member to grow and shine with their abilities. Give changing jobs to the team and take them for the comfort zone to keep their interest up. You don't want your team to be bored from what they are doing

30.Design RACI model for 3 administrative measures of the project.

30.1. Introduction:

A RACI matrix is a common technique used to implement a decision-rights framework to clarify the roles and responsibilities for key processes. The RACI matrix clarifies responsibilities and ensuring that everybody is assigned to do all the project needs to be accomplished, ((Averdunk, I., 2021) , (Weill, Peter, W and Ross J. W. 2004))

30.2. Definition:

The RACI model is a straightforward tool used for explaining the roles of stakeholders in the project for avoiding confusion over those roles and responsibilities during a project.

The acronym RACI stands for (Cristini, T, 2019):

1. Responsible: The stakeholders responsible for doing the work in order to complete the tasks and project.
2. Accountable: The stakeholder who is accountable for the correct and thorough completion of the task. This must be one individual and is often the project executive or project sponsor.
3. Consulted: The key stakeholder who provide information for the project and with whom there is two-way communication. This is usually several people, frequently subject matter experts.
4. Informed: The stakeholders kept informed of progress and with whom there is one-way communication. These are individuals that are affected by the outcome of the tasks, so need to be kept up to date.



Figure 9: RACI member

A RACI chart is a common way of showing stakeholders who are responsible, accountable, consulted, or informed and are associated with project activities, decisions, and deliverables.

Delegation is an important part of a project manager's role, so recognizing roles and responsibilities early in a project is important.

30.3. Creating a RACI Matrix (step-by-step)

1. Identify Roles
2. List Tasks project and list them on the left-hand side of the chart in completion order
3. Identify all the project roles and list them along the top of the chart.
4. Assign Each Task to a Role and Responsibility
5. Complete the cells of the chart identifying who has the responsibility, the accountability and who will be consulted and informed for each task.
6. Ensure every task has a role responsible and a role accountable for it.
7. No tasks should have more than one role accountable. Resolve any conflicts where there is more than one for a particular task.
8. Share, discuss and agree on the RACI Matrix with stakeholders before project starts.

30.4. Advantage of RACI Matrix:

RACI Matrix have the following advantages:

- 1- Avoiding Individuals Overload
- 2- It prevents the overwork of team members.
- 3- It removes role confusion.
- 4- It helps eliminate unnecessary tasks.
- 5- It is one of the good communication tools.
- 6- It can be used for resource allocation

30.5. Disadvantages of RACI Chart

The RACI matrix may have the following disadvantages:

1. Complex projects make RACI charts extensive with many team members. The identification of which individual is responsible for any given task can also be difficult.
2. Stakeholders will be confused if they don't understand the differences among the terms, especially Responsible versus Accountable and Consulted versus Informed.
3. It's a formality and a waste of time if no one references it after approval.
4. It is not suitable for all types of projects.
5. It may add complexity to the process or project

Table13: RACI Matrix For construction house

	Leadership			Team Member	
	Project Sponsor	Financial Manger	legal	Project manager	Project Engineers
Initiate Phase Activities					
Request review by PMO	R/A				
Develop Base Project	R	A/C			A/C
Submit Project Request	R	A/C	A/C		I
Develop business case	A/C				
Final Legal Review and Approval	R		A/C		
Plan Phase activity					
Create project charter	C			R/A	C
Create Schedule	I			R/A	C
Create Safety Plan	I			R/A	I
Execute Phase Activities					
Build Deliverables	C/I	C/I			R/A
Create Status Reports	I	I	I	R/A	R/A
Performance Phase Activities					
Create Project Closure Report/Documents	C/A	C/A	C	C	C/A
CREATE lesson learned	I	I		R/A	I

31. Identify the conflict and crisis

31.1. What is conflict?

Conflict in general is a social phenomenon that reflects a state of unease or psychological pressure resulting from incompatibility between two or more desires or a conflict of two or more wills.

Also, it can be said that:

A condition caused by a real or imagined conflict of needs, values, and interests. The conflict can be internal (within the same person) or external (between two or more individuals).

Conflict as a concept helps explain many aspects of social life, such as social difference, conflict of interests and wars between individuals, groups or organizations.

A common definition of conflict is:

"When two or more parties perceive conflicting goals and seek to weaken each other's abilities to reach the goal."

31.2. Attitude towards conflict:

The conflict situations that a person constantly experiences are his attitudes towards his psychological and biological activity. Hunger, for example, is a "conflict situation in which the strength of the need for food and the strength of the commitment to social conditions for gratification are in conflict. Whenever the urgency of the biological force is weak, the behavior is biased towards the strength of psychological factors, as it is in simple hunger or in the beginning of hunger. The opposite occurs when hunger intensifies, as it begins to bias towards the biological factor.

31.3. The nature of the conflict:

It is the situation, or the body that appears within the dialogue, or the situation that leads to the occurrence of conflict between people, and the nature of the conflict depends on two sides, the first is positive, and the second is negative. On the dialogue, as for the negative side of the conflict, it is what negatively affects the dialogue, and turns it from a mere dialogue to discuss ideas into a kind of attempt to destroy the parties for each other, and the keenness of each party to impose its opinion on the other.

The nature of the conflict is characterized by rationality, objectivity, and transparency depends on the principles, and the foundations on which the parties to the conflict depend in dealing with each other. If these principles depend on the positive side of the conflict, then useful results will be reached. Then no useful results will be reached, and the struggle will continue for a very long time.

31.4. Forms of conflict:

1- Differences:

It is a lack of agreement between individuals on something, and it is part of human nature; Every human being looks at the things around him with a special view in him, and deals with situations in his environment in his own way.

Therefore, the differences often result in a conflict in which each person seeks to prove that his view and method are the correct ones, and the dispute can end with the understanding of all parties to reach an appropriate result.

2- Disputes:

It is a set of differences that are related to the existence of reasons that lead to, or reject an opinion, or decision, and lead directly to the occurrence of conflicts between the disputants.

The conflict depends on the argument, and the discussion that must be accompanied by a state of intense anger within the conflict session, which results in an increase in the intensity of the conflict, and does not lead to reaching any results, or decisions that are agreed upon by all.

3- Crises:

Any threat that may cause harm to people or property, or lead to disruption of the workflow, as every institution or company is subject to crises that may lead to damage to its name and reputation.

The term crisis management has emerged, which is concerned with studying the potential risks that may occur in the future and affect work, and develop a plan to address them positively.

31.5. How are crises managed?

Crisis management needs a plan, as the crisis management plan is known as Crisis Management is a reference tool, not a detailed work program, and it does not contain specific and specific steps for how to solve the crisis, but rather includes lists of key contact information, reminder points for what to do when faced, and templates to document how to respond to each crisis.

31.6. Some examples of expected crises:

31.6.1. The occurrence of natural disasters:

such as floods caused by the explosion of water pipes or heavy rain, or damage caused by storms.

31.6.2. The presence of thefts and acts of sabotage:

such as the company's exposure to theft of money or equipment, or its exposure to sabotage that leads to the destruction of machinery and vehicles, in addition to various safety and security risks.

31.6.3. Fire outbreak:

Fire is one of the most dangerous crises that can disrupt business and destroy buildings and machinery.

31.6.4. Power outages:

It is a potential danger, and it is considered a crisis as it leads to the inability to use information technology, communication systems, and the operation of devices, machines, and equipment.

31.6.5. IT system downtime:

such as the exposure of the information system to viruses, or hacking attacks, which leads to system downtime, and the inability of employees to perform their work effectively and efficiently.

31.6.6. The spread of diseases and infection:

The spread of infection among facility employees or among animals may occur if the work involves animals, crises that lead to many health and material risks.

31.6.7. Loss of key employees:

The absence of an administrative employee with a pivotal role in the work can cause a crisis for employers, whether his absence is due to illness for a period, or his absence from work completely.

31.6.8. Disagreement with suppliers:

In the event of a supplier crisis, it is necessary to plan how to obtain alternative supplies.

32. Three expected scenarios of the conflict's events in the project.

Conflict emerges when two or more conflicting alternatives, reactions, or courses of action are considered to fulfill a specific event or circumstance, or when the interested parties feel a danger to their wants, interests, or concerns. The building process is fraught with ambiguity, and uncertainty that breeds strife (Furst, 2012). The capacity to deal with people effectively, elicit their cooperation, and manage disputes can be important to the success of a construction project.

Expected Conflict Scenarios:

The nature of the building business throughout the world is such that there is already a dispute between the primary construction project players, owners, design specialists, and contractors. The construction business is notorious for having a high level of conflict and dispute. Some of the anticipated conflict scenarios on our project are outlined here.

1. Conflict arises as a result of a breakdown in communication between individuals over their wants, ideas, views, objectives, or values. The breakdown in communication may occur between the stakeholders and it will be the responsibility of the Project Manager to maintain good communication with all involved stakeholders.
2. It is the role of the design expert to define and design the project scope in order to fulfill the owner's functional, budgetary, schedule, and environmental project objectives. When a design expert fails to achieve his responsibilities, the owner is nearly always displeased with the outcome, resulting in stringent contact between the parties. Furthermore, when the scope of the work is unclear, it creates an uneasy relationship between the owner and the contractor in the future, as they argue about the scope and quality of the work, as well as whether the work is appropriately characterized by the contract documents prepared by the design professional.
3. Contracts are common sources of dispute in the construction business; practically every stage of the building process is governed by some kind of agreement. Contract disputes can occur in a variety of areas, including breach of contract in contract clause interpretation, an inspection of work terms, indemnification clauses, payment of supplies, and obligation to third parties, to mention a few.
4. While each member of the construction crew may have a distinct goal in connection to their profession, their main goal should be to complete the project within the time frame specified. When team members' aims are incompatible, conflict might emerge.

Furthermore, their interpretations of contract papers, terms, and conditions may differ, resulting in inconsistencies and disagreement.

33. The optimal strategies to deal with each conflict and specify the reason of preference.

We have defined some of the optimal strategies to deal with conflicts on this project (Vallerand, 2021). These include:

1. Conflicts in the workplace are frequently the result of poor communication. Ensure that everyone involved in the project understands what is expected of them. Keeping everyone on the same page and informed of any adjustments or revisions to the project or timeline plays an important role in minimizing conflicts. Construction projects create a vast amount of documentation and communication; the quality of those papers, in terms of clarity and meaning, might be confusing, provocative, or even overpowering. Small misunderstandings may be avoided by using straightforward and careful language, preventing them from growing into larger disagreements.
2. When a potential issue is discovered, the initial stage in conflict resolution should be a negotiation. This aids in the maintenance of excellent business ties and is less expensive than any other sort of formal resolution.
3. It is critical that the persons in charge of project management have a thorough grasp of the contracts, as well as the rights and duties of all parties involved in the project. Contracts must be explicit and unambiguous, defining each party's duties and obligations and, if relevant, specifying the modalities of dispute settlement. A sufficient provision for contingencies and risk reserves, as well as a clear decision-making process and thorough assessments, are all helpful tools for dealing with potential claims.
4. Internal management processes are the most effective barrier to construction conflicts: this necessitates detailed preparation of the procedures and activities to be taken to avoid or rapidly identify and handle disputes.
5. Alternative dispute resolution (ADR) or out-of-court agreements frequently enable stakeholders to discover their own successful solutions to construction conflicts. Tensions are generally addressed internally, promptly, and privately, preventing

confrontations from escalating. As a result, ADR can significantly save the parties' resources, expenses, and time.

34.Root Cause Analysis

1. Delaying due materials
 - 1.1. Pre-planning: no contact with contractor in enough time to insure all material are available.
 - 1.2. Miss-communications: confirmation issue while communication between purchaser and contractor to provide required material in right time.
2. Wrong delivery
 - 2.1. Miss-communications: wrong requested material from supplier or wrong loaded material.
3. Wrong installation
 - 3.1. Miss-communications: wrong requested order to contractor.
 - 3.2. Follow up issue: no close supervision and check point for each phase during project.

35.Distribute of the human resources on the functions.

First, the project manager Mohammed Al-Sati

- **Scope Management:** The scope of work is determined by defining the works that will be included in the project, and other works that will not be part of the project.
- **Time Management:** It is through managing the processes related to the completion of the project within a specific time, by defining and following up the activities and estimating their resources and the time needed to implement them. It also includes developing and controlling the schedule.
- **Cost Management:** The costs and budget needed to establish the project are determined.
- **Quality Management:** This is done by defining the necessary methods to reach the maximum levels of perfection and perfection in the project field while maintaining sustainability and survival.

- **Integration Management:** This is done by defining, defining, compiling and coordinating the various management processes and activities of the project within the project management process group.
- **HR Management:** It means attracting employees, selecting them, training them, providing them with rewards, and placing the available competencies in the appropriate places for them and others with regard to the affairs of employees or workers.
- **Communication Management:** It is to develop a plan that defines the different ways of communication between the management and project workers on the one hand, and between the management and stakeholders in the project on the other hand, while specifying the most important information that must reach each of those parties.
- **Risk Management:** It is defined by identifying the risks expected to occur in the project, the means of preventing their occurrence, and setting alternative plans in case they actually occurred.
- **Procurement Management:** It includes the management of matters related to procurement and supply, by defining the materials to be purchased, the place from which they will be purchased, the purchase criteria, what contracts are used in that process, and the type of those contracts.
- **Stakeholder Management:** It means managing the relationship with the project parties, and every person who affects the project or is affected by it negatively or positively is considered a party to the project.

Second, the deputy project manager, M. Meshari Al-Anzi

1. Support the Project Manager in daily project implementation tasks.
2. Support contract and supplier management, ensuring approvals of results.
3. Monitor project performance and coordinate the implementation of strategic initiatives.
4. Preparing and submitting reports to the project manager.

Third, the contract manager. ENG. AbdulRahman Qaramsh

1. Ensure compliance with legal, governmental and regulatory requirements and rules relating to contracts and tenders.
2. Motivating the company's departmental employees through effective leadership, directing and motivating the employee to perform to the best of his abilities.

3. Conducting performance appraisal sessions to review the employees' work performance.
4. Appointment of Bid Analysts for the assigned tenders.
5. Ensure that contracts are consistent with the result of the Bidding Committee, award notification and Tender Committee examination.
6. Ensure that construction and engineering code policies and departments are followed

Fourth, the project coordinator a. Munifa Al-Anzi

1. Use various tools to monitor working hours, plans, expenses, and schedule deadlines.
2. Monitoring the progress of projects and preparing reports on the achievements made on the projects.
3. Ensure that standards and requirements are met by performing quality assurance tests.
4. Coordinate project management activities, resources, equipment and necessary data.
5. Divide projects into executable actions with appropriate time frames.
6. Communicate with clients to determine requirements, goals and deadlines.
7. Distribute tasks to team work and assist in schedule management.
8. Ensure that clients' needs are met as projects continue to evolve.
9. Preparing periodic reports on the analysis of risks and opportunities.
- 10.Overseeing the procurement department in projects.
- 11.Monitoring the progress of projects and dealing with any problems that arise.
- 12.Cooperating with the project manager and providing the necessary support.
- 13.Follow up on the issuance of all legal papers such as contracts and terms of the agreement...etc.
- 14.Create and maintain project documents, plans, and reports.
- 15.Participation in the preparation of budgets.

Fifth: Director of Human Resources a. Mohammed Hamid

1. Forming a link between the company's management and employees, and solving the problems that occur between them.
2. Evaluate the performance of employees and submit reports to the company's management.

3. Supervising the interviews of individuals nominated for admission to the company.
4. Training employees and developing their skills through the establishment of training programs.
5. Supporting employees and motivating them to develop and improve performance.
6. Develop and direct strategies and administrative services in the company.
7. Publishing job advertisements in the company[2].
8. Disbursing salaries to employees and reviewing the salary budget[2].
9. Monitoring compliance with laws and regulations in all departments of the company[2].
10. Management of compensation and reward programs in the company[2].
11. Supervising the acceptance or rejection of leave and leave[2].
12. Monitoring the work of the human resources department[2].

Sixth: Sales Manager a. Hassan Sabban

1. Working to convert each potential client into a permanent client.
2. Develop long-term and short-term sales plans for the company in order to achieve sales targets.
3. Carefully select the sales department staff, in addition to working on training and developing their skills continuously, in addition to giving them advice throughout
4. Work and assist them to achieve the goals assigned to them by the Sales Manager.
5. Supervising the processing of sales contracts in coordination with the company's legal department.
6. Permanent study of the real estate market and knowledge of all the strengths, opportunities and threats within the market in order to take advantage of them and turn them into promising opportunities that serve the company.
7. Full knowledge of all technical, administrative and financial details of the company's projects in order to help him give the correct perception to customers because of their positive impact during the presentation and negotiation processes.
8. Studying competing companies in a deep and continuous study and knowing their strengths and weaknesses and their competitive advantages. Supervising the development of the promotion and advertising plan with the Marketing Department.

Seventh, Director of Finance and Administration a. Awad Al Sabban

1. Management of company budgets
2. Account management

3. Preparing and supervising the company's profit reports
4. Considering, reviewing, verifying costs, expenses and revenues
5. Planning and directing the efforts of employees in the financial department of the company
6. Supervising the overall operations and activities of the company's finance department

Eighth, director of engineering supervision m. these are the boys

1. Determining the responsibilities of the contracting engineers.
2. Clarify some of the contractor's responsibilities, obligations and rights when executing the works.
3. Clarify the conditions, instructions and regulations related to implementation.
4. Determining the basic steps for supervising the implementation of the work of the various projects.
5. Determining the procedures followed in the supervision of the implementation of projects.
6. Raising the level of quality of project implementation, by raising the level of supervision over them, and implementing quality control programs, thus reducing project maintenance and operating costs.
7. Reducing problems and obstacles that may arise during the project implementation period.
8. Creating an atmosphere of trust and a spirit of cooperation between the elements of the project (contractor/supervising agency/employer).
9. Analyzing the client's needs, objectives and safety needs.
10. An initial conception of the functional, aesthetic, idea, and suitability of the standard standards.
11. Develop and submit a final design proposal through appropriate presentation methods.
12. Preparing working drawings and specifications for building materials and various details, materials, finishes, furniture and constants such as bathroom and equipment, and their conformity with the system and scientific evidence.
13. Cooperating with the rest of the engineers and obtaining technical licenses in the fields of mechanical, electrical, loads and approval requirements.
14. Reviewing and evaluating the design during implementation and after the completion of the project.

15. Counter, schedule, coordinate and control engineering projects.
16. Monitor compliance with applicable laws, practices and quality assurance policies.
17. Interact on a daily basis with clients to explain their needs and requirements.
18. Quality control, performance standards and specifications required by the project.
19. Follow up on work, budget, schedule, plans and staff performance and report regularly on project status.
20. Defining and distributing responsibilities to the work team within the project.
21. Cooperating and communicating with the project manager and various departments to provide assistance and technical support.
22. Follow up on achievements and set delivery dates.

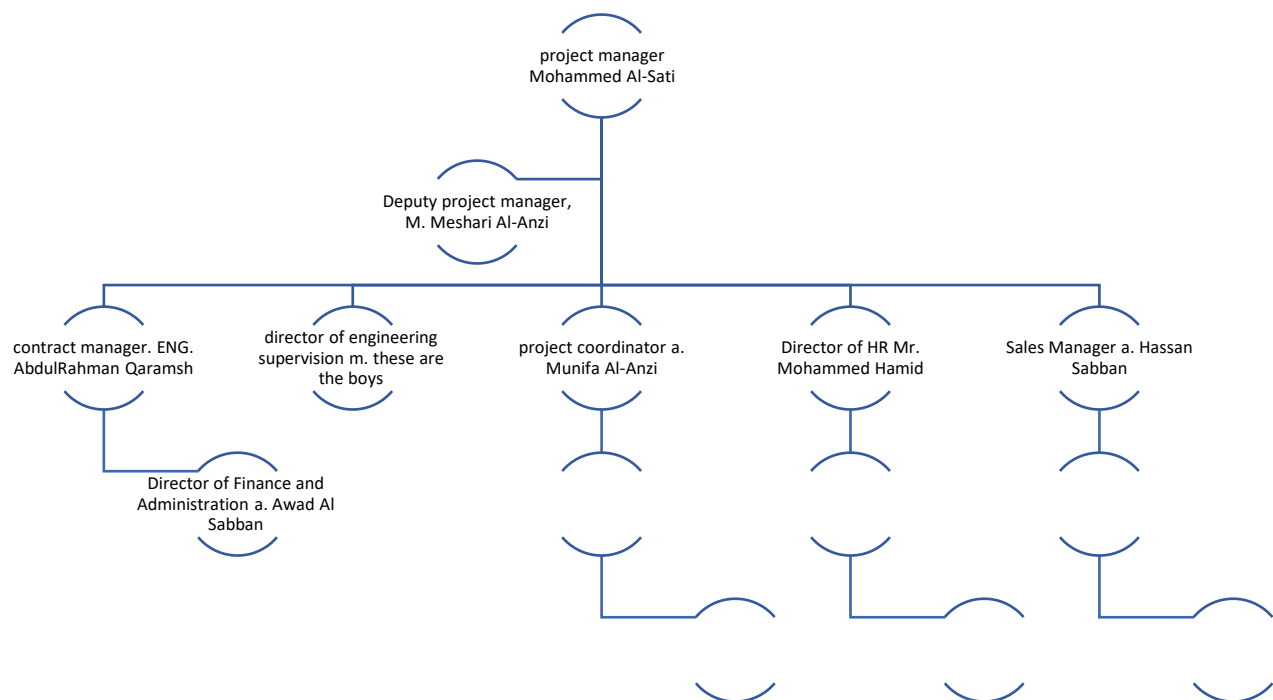


Figure10: Distribute of the human resources

36. Analyze the influence of conducting Crashing and Fast-tracking process on the timetable, in addition to representing the table after achieving the two measures.

Reducing Project Crashing Time

Reasons for reducing the time to complete the project.

Plan to reduce activities.

Steps to follow to reduce project time.

Reducing project completion in the case of an open budget.

Reducing project completion in the case of a set budget.

First: Reasons for reducing the time to complete the project and expediting its completion:

The need to reduce project completion time may arise from what is estimated at the planning, scheduling, and implementation phases.

In the planning stage: the entity wishing to implement the project submits time estimates for the different stages and activities, and determines the expected times for completing each activity and stage, and this is within the (project bid) that is submitted for the purpose of obtaining the right to complete the project.

The entity for whose account the project is being undertaken (the client or the beneficiary) may discuss these estimates with the company submitting the bid. In most cases, these parties ask the bidding company to reconsider its estimates and plan with the aim of compressing the time of completion of the project for various reasons expressed by the client or the beneficiary of the project.

In the project implementation phase: there may be an urgent need to implement the project in a time less than the time agreed upon when the project agreement was signed.

A - The transportation problem in one of the major cities may have reached the point where the project cannot be completed within the time proposed and agreed upon in the project contract. (generally)

B- An example of this is also sanitation projects that require urgent implementation to avoid the undesirable effects of not providing this service in a timely and critical manner, especially since delays in this type of project may affect the implementation of other facilities associated with the completion of this project. (generally)

C - Also one of the reasons for the haste in implementing the project and the pressure of time to complete it before the time agreed upon in the project contract, is an economic reason. The entity for whose account the project is being completed (the client or the beneficiary) may wish to complete the project in a shorter period so that it can achieve a

specific return or income in the case of early completion to seize the times of occasions and holidays or to penetrate the market with a new product before other competitors in the market, so competition conditions call for pressure. The time to complete the project beyond the time agreed upon in advance. (generally)

W- Another reason that calls for reducing the time to complete the project is to avoid the rise in the cost of implementing the project, because the prices of construction supplies are increasing significantly. In the event that certain costs are agreed upon in the contract for the project, it is in the interest of the implementing agency or the client that the project is implemented in a shorter and faster time in order to avoid the increase in costs for them. (in general and in particular)

C - In the military field and international military projects, the period of rapid completion and rapid implementation of such projects plays a very important role in order to achieve progress in areas such as the nuclear race, armament programs and space conquest. All this calls for compressing the time of completion of these projects beyond the specified and agreed upon time in advance. (generally)

H- One of the reasons that calls for reducing the time during the implementation of the project is the change of circumstances under which the original plan for implementation has been drawn up. A kind of new financing may appear that was not available during the project planning process, such as international loans that are specifically provided to help finish the project. Major projects in some countries, such as roads, transportation and sewage networks projects. When this type of new funding is available, the project organizers must develop a specific plan for distributing these funds in a way that ensures reducing the time to complete the project at the lowest possible cost. (generally)

Second: Plan to reduce activities:

Reducing project completion time inevitably requires additional resources. It may be necessary to have another number of people to be employed for this purpose, or to operate the existing workers for additional periods, and it is also necessary to have new machines and equipment that achieve better technological performance and therefore faster completion, and all of this would increase the costs of the project.

In order for this increase in costs to be as small as possible, there must be a so-called optimum (reduction plan) for the activities which in turn will lead to the overall reduction of the project completion time.

And as an important rule: we must make it clear that if you want to reduce the time to complete the project, the attention should be focused mainly on critical activities.

In the example below, which shows the following: Business Network Our project Build a model house, sequential activities, critical activities, and the minimum time required to complete the project.

„And that the minimum time needed to complete the project is (450) days because the total critical activities are (450) days and the length of the critical path is (450) days.

In the project of our graduation project, if we add new resources to activity (c), which is a non-critical activity, so that its time is reduced from (100) days to (80) days, we will notice that the least time required to complete the project is still (450) days.

In other words, the project completion time is still governed by the critical path. Therefore, adding new resources to the non-critical activity is a waste of effort, resources and costs.

For example, reducing the time required for activity (f), which is a critical activity, by an amount of (120) days, will result in reducing the time to complete the project to (330) days.

This means that the procedure is an effective procedure that has a direct impact on the completion time of the project.

We must realize that the process of reducing (crashing) the time of project completion - through critical activities - is a process that has two aspects:

First: the geometric aspect.

The second is the economic aspect.

As for the first aspect: the engineering aspect: it is represented in answering the possibility of reducing the time required to complete a specific activity from a technical point of view. For example, you must wait for a certain period of time until the foundations are solid enough before building on them. In other words, project specialists and executives must answer the following question:

Is it possible to reduce the time of activity? If yes, what is the maximum possible reduction for each activity?

-As for the second aspect: it is the economic aspect: it is represented in the additional material burden borne by the project in terms of costs resulting from the process of reducing the critical activity, and consequently for the project as a whole.

Reducing the time required for the activity requires additional resources that are often more expensive to obtain than the original costs.

The employment of individuals working in the project on extra shifts or on holidays entails the payment of wages higher than the normal days, and this characteristic appears in the contracting sector.

If the project owner wishes to complete it in a short period, he must pay the prices of building materials, which are certainly more than the prices specified previously when signing the project contract.

It is the cost to be taken into account when deciding to reduce, as we will see in an upcoming example.

On the other hand, the decision to speed up the completion of the project as a whole by reducing the times of critical activities, must be accompanied by a study of the return and cost at the level of the project and not only the activities.

If the expected additional realized return from accelerating the project exceeds the additional cost, the decision to speed up will be justified, otherwise such a decision will not be justified if the costs are more than the return achieved from reducing the time of completion of the project.

So far, we have explored the theoretical basis for the process of reducing activity and project time.

Now what are the steps that are followed to achieve this procedurally. The answer lies in the following:

Third: Steps to follow to reduce project time:

We made estimates for the normal and low time for each activity.

We have made estimates of the normal costs and the cost of low time for each activity.

We have identified the critical path and critical activities.

We started the process of reducing critical activities, starting with the critical and least expensive activity, provided that this reduction is in one unit of time.

We reviewed the impact of this on the critical path and the available budget.

Continue the steps until you reach the desired date or until you use all the funds

Fourth: Reducing project completion in the case of an open budget.

Fifth: Reducing project completion in the case of a set budget.

Fast-tracking in project management:

Fast-tracking in project management is **a technique where activities are performed in parallel**, instead of being carried out sequentially using the original schedule. Simply put, fast-tracking a project means different tasks are worked on simultaneously, instead of waiting for each task to be completed separately.

What is fast-tracking in project management?

Fast-tracking in Project Management is a technique where activities are performed in parallel, instead of being carried out sequentially using the original schedule. Simply

put, fast-tracking a project means different tasks are worked on simultaneously, instead of waiting for each task to be completed separately. However, fast-tracking *can only be applied* if the activities question can actually be feasibly overlapped.

Fast-tracking allows you to compress a project timeline and shorten the project duration.

When you fast-track project schedules, a planned activity partially or completely overlaps with another. So, activities that were initially scheduled to be done one after another are rearranged to occur at the same time.

A diagram might help you to picture what we're talking about:

Project Documentation ★

Keep track of all your project's documentation in one place! This board will help you store and organize your documents per specific phase of your project. It will also help your team become accountable for their own tasks and keep everyone aligned.

Default ▾ New Item ▾ Search Person Filter Sort ▾

Guidelines

Document ⓘ	Owner ⓘ	Status ⓘ	Approved by ⓘ	Approval Status
Read me first!		Working on it		Waiting for Approval
+ Add				

Pre-Initiation

Document ⓘ	Owner ⓘ	Status ⓘ	Approved by ⓘ	Approval Status
Feasibility Report		Working on it		Waiting for Approval
+ Add				

Reference:

<https://pmstudycircle.com/>

If this sounds like it might be necessary to hit your project deadlines, know that you're not alone.

An estimated 48% of projects are not completed on time — resulting in huge financial losses for businesses of all sizes.

Teams can fall behind on a project schedule for a number of reasons:

- Undefined project scope
- Lack of materials or resources
- Malfunctioning equipment
- Low levels of productivity
- Poor communication
- Not using proper types of collaboration tools

If a project is delayed, the situation isn't entirely hopeless. Fast-tracking can help you recover a schedule when things start to veer off track.

However, it should be noted early that fast-tracking (while an awesome scheduling technique) can only be applied when the task you're trying to fast track isn't dependent on the completion of the one before it.

Nonetheless, if managed well (and you really do need to be hot on management of a fast-tracked project) it can be a life-saver.

When to fast track your project

Fast-tracking is one common approach to schedule compression; the crashing technique is the other. So, if fast-tracking a project isn't feasible, a project team can choose to "crash" a schedule instead.

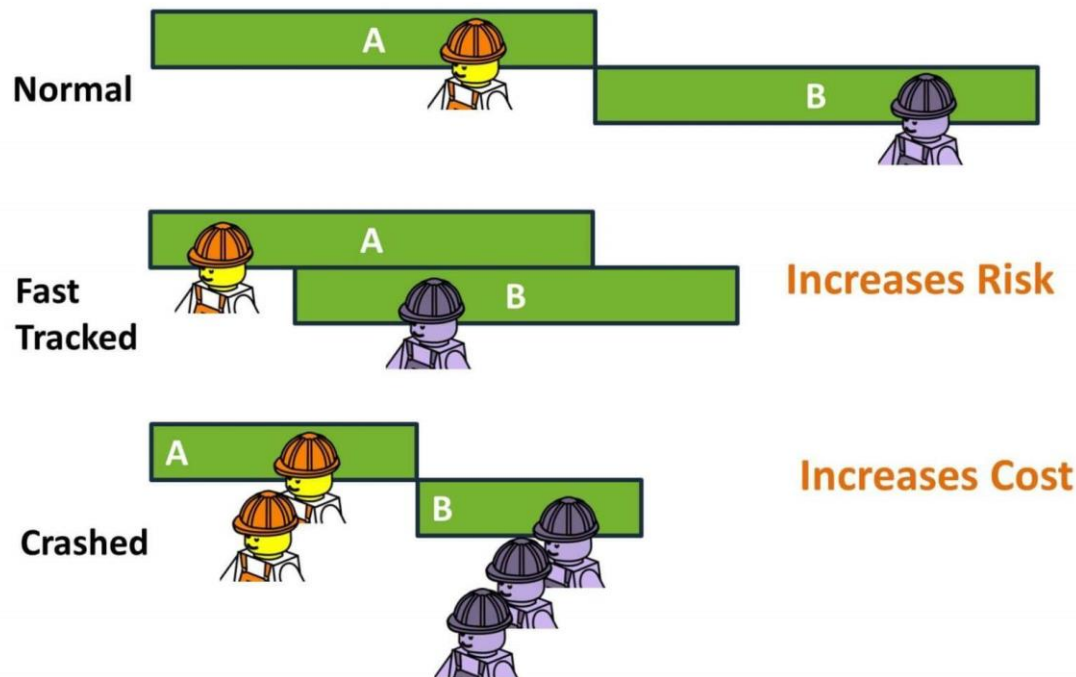
Project crashing is when you add additional resources to an activity, rather than moving up its start date.

Let's look at an example for a construction project. Instead of having one person wire a new house, you could add additional resources (e.g., hire more electricians) to get the job done faster.

Project crashing can speed up project delivery times by compressing the schedule, but there are increased costs to consider. Allocating extra resources also means that you could be taking people away from other projects.

And you have to keep the phrase "*too many cooks in the kitchen*" in mind. Sometimes adding extra people is more hassle than it's worth.

Here's an example of how a normal project schedule compares to fast-tracking as well as crashing:



Recourse: <https://getxinstitute.com/>

Now that you have a solid understanding of the benefits and process of fast-tracking, let's examine a few of its dangers.

The dangers of fast-tracking a project:

Fast-tracking a project sounds great — you can perform multiple tasks together and potentially deliver before the deadline.

But fast-tracking a project that's already in motion is risky. It means you'll have to rework the current schedule and communicate those changes to your team.

Running too many projects at the same time is also one of the biggest project management challenges that organizations face:

Running too many tasks at once comes with the same pitfalls.

Consider the impact that multitasking has on productivity.

Studies have shown that people who multitask make more mistakes and are less efficient. Slamming your team with more work than they can handle can affect their output quality.

And fast-tracking only works for activities that can be overlapped. You can't fast track a new paint job until the rest of the car is built.

There's also the risk that fast-tracking a project won't affect the end date.

The critical path is the longest series of tasks through your project — It's the path that determines your final delivery date. Which means the only way fast-tracking will change your end date is if it's done to tasks on this path (aka the critical activities).

How to fast track a project:

Proper planning is essential to fast-tracking a project. Follow these steps to get started with this project management technique:

1) Create a fast-tracking plan

Fast tracking means taking an already created schedule and compressing it so that certain activities are completed sooner, and the overall schedule duration is shorter.

But, before you jump into the fast track process, here are some questions to ask:

How much time do you need to recover?

What activities are on the critical path?

What are the dependencies?

You also need to consider the impact that changing the schedule will have.

For example, if you assign more work to a team member, will they have the materials and time to complete the tasks? Will you need to pay overtime to ensure the work gets done before the deadline?

2) Reconfigure the schedule

The next step is to identify your fast-tracking opportunities and update your schedule. Activities that aren't dependent on the ones before them being complete can be fast tracked.

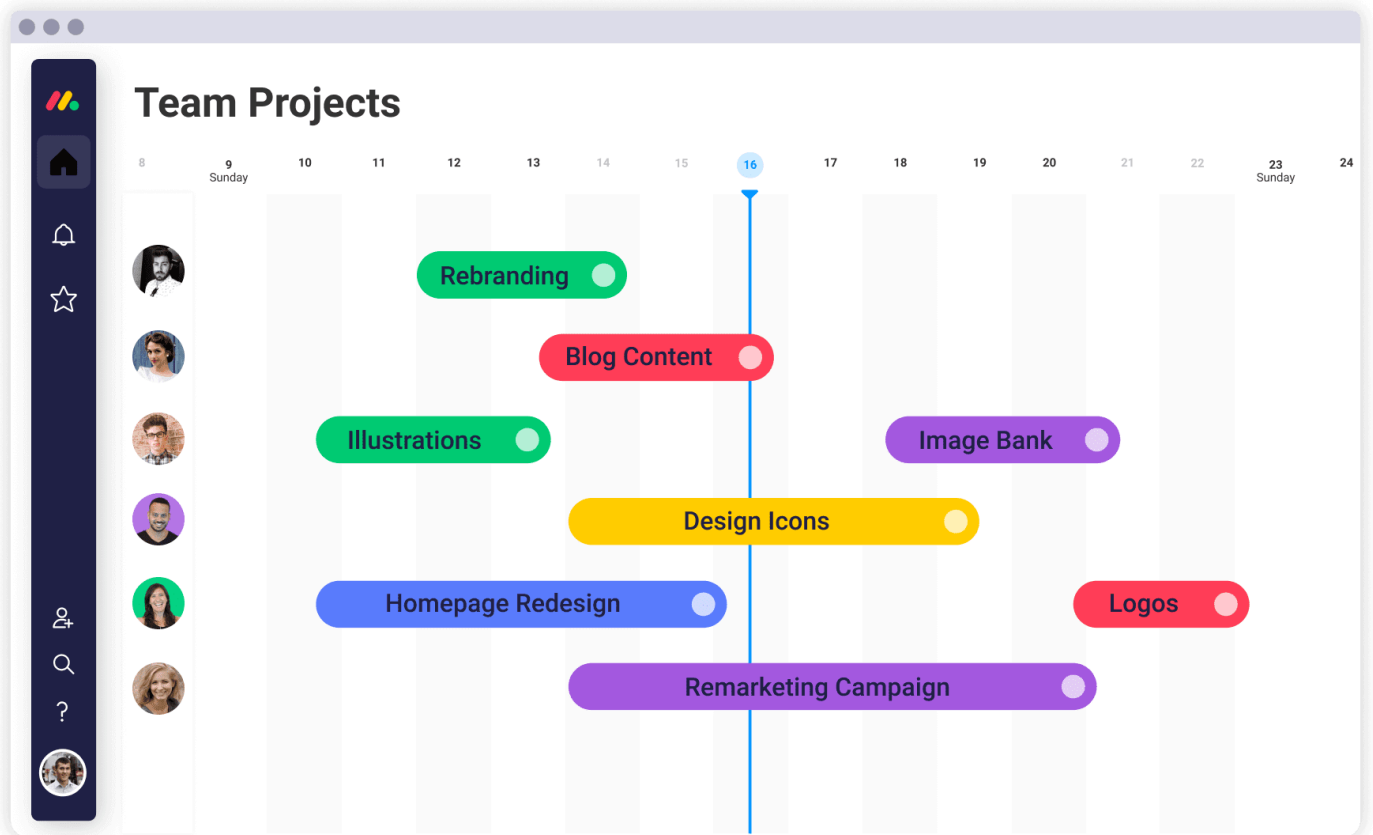
For example, let's say you're planning an event. You're responsible for finding a venue, arranging guest speakers, and sending out invites.

While you'll eventually need to tell the guest speakers where to show up, you don't have to have the venue locked in before starting your speaker search. But you can't create invitations to the event until your venue is confirmed.

Look at your critical path, identify the opportunities, and reconfigure activities that can overlap with each other.

Using a Gantt chart or timeline is useful here as you can better visualize your critical path activities, task sequences, and durations.

Here's an example of how a marketing and design team's projects could overlap



Here we can see that “Rebranding” and “Illustrations” overlap with each other. They’re being worked on at the same time by the same team.

3) Monitor progress

The signs of a failing project aren’t always easy to spot. That’s why it’s important to constantly monitor the project and ensure things are on the right track.

Communicate frequently with your team and make sure they have everything they need to do their jobs.

You can use monday.com’s project tracker template to get an overview of where things stand and identify potential bottlenecks:

Process Management ★

Add board description

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📅 This Month

	Owner	Priority	Phase I	Phase II	Phase III	Timeline	Progress	
Project 1	👤	★★★	Done	Working on it		Jul 1 - 7		34%
Project 2	👤	★★★	Done	Done	Stuck	Jul 5 - 15		67%
Project 3	👤	★★★★	Done	Done	Done	Jul 4 - 9		100%
+ Add								
2.3 / 3								67%

📅 Next Month

	Owner	Priority	Phase I	Phase II	Phase III	Timeline	Progress	
Project 4	👤	★★★				Aug 28 - 31		0%
Project 5	👤	★★★★				Aug 11 - 14		0%
+ Add								
2 / 3								0%

📅 Completed tasks

	Owner	Priority	Phase I	Phase II	Phase III	Timeline	Progress	
Project 6	👤	★★★★				May 19 - 25		0%
Project 7	👤	★★★				Jun 17 - 23		0%
+ Add								
2 / 3								0%

4) Keep track of any problems

It's likely you'll experience some hiccups when fast tracking a project.

Document any problems and note down how you addressed them. That way you'll be better prepared if a similar situation happens in the future.

How can project management software help you with fast-tracking?

Project management software enables you to see an overview of ongoing tasks, their status, and the people responsible for them all at a glance.

This lets you identify activities that can be fast tracked and monitor the impact of any changes you make to the schedule. Moving one task will automatically shift related ones.

37. Develop general rules for the negotiation process.

Negotiation is the process through which two or more people (or organizations) settle a problem or reach a better conclusion by reaching a compromise. Negotiation is a method of avoiding arguments and reaching an agreement with which both parties are happy. Our company and project team believes in integrative negotiation. Integrative negotiators do not believe in a set pie, but rather think that both parties may generate value or mutual benefits by proposing trade-offs and reframing the problem such that everyone walks away with a win-win solution.

Our company and project team has devised several rules for the negotiation process. These rules are discussed below:

- Know your negotiation goal
- Develop a plan before starting negotiations
- Thoroughly study and don't underestimate your counterpart
- Try to make negotiation a win-win situation for both parties
- Don't negotiate with yourself
- Strongly react if you find that the opposing party is untrustworthy
- Always negotiate in writing

38. Two negotiation plans

Since our company is a construction firm most of the time, we will be negotiating with our material vendors and suppliers. The negotiations can take place within the team or company as well.

Table 14: Negotiation Plan A

Description of what is being negotiated: Negotiating project schedule and timeline with the project owner.		
Relationship Type: New relationship.		
	Ours	Theirs
Most Desired Outcome	Complete project by 1 September 2023.	Complete project by 1 July 2023.
Goal	Get an increase in the project completion time by at least 2 months.	Finish the project as decided earlier.
Least Acceptable Agreement	Increase project completion time by 2 months.	Increase project completion time by 1 month.
The best alternative to a negotiated agreement	Increase project completion time by 1 month.	Increase project completion time by 1 month.
Known facts	The project team is busy as a new project has been taken which will run parallel to this project.	The owner wants to move in July. He is living in a rented apartment and wants to move in as quickly as possible.
Assumptions	Some team members will have to be re-allocated from this project to another project and it will result in a shortage of workers.	The project team is solely working on this project.
Trades (equal trade-offs)	Reduce 1 month from the additional time asked.	Grant one month additional to complete the project.
Conclusion	Granted 1 month additional to complete the project.	Granted 1 month additional to complete the project.

Table 15: Negotiation Plan B:

Supplier Name: SEIF Suppliers	Their Team: XYZ	Our Team: XYZ				
Target #	Description of Negotiable Element	Must-Have? (Y/N)	Like to Have? (Y/N)	Objective	Strategy to obtain objective	Outcome Status
1	Reduce the proposed cost of the materials purchased in bulk	Y	Y	Due to high volume, it will be necessary to cut costs.	Purchase items in bulk at the start of the project.	The supplier has agreed to reduce costs by 5%.
2	Increase the quality of materials	Y	Y	This project requires the best quality materials.	Explain supplier your requirements for the materials.	The supplier has agreed to supply the best quality materials.
3	Reduction in the materials delivery time	Y	Y	Timely delivery of materials will be crucial for the success of this project.	Purchase materials in bulk and order materials when sufficient quantities are still available at the construction site.	The supplier has agreed to deliver materials in time.