

Full Length Research

Managing Effective Project: Defining and Organizing Project, Planning, Projects, Monitoring and Controlling Project

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Accepted 23 June, 2021; Published 27 July, 2021

It is important to make the distinction between a project, something with a defined start and end point, and normal work that recurs. We often hear people talk about maintenance projects or annual appraisal projects etc. These are not projects and the difference is linked to risk. A project is something new, therefore, it carries a higher level of risk; you cannot be sure of the outcome. Regular maintenance or other routine work activities have been done before, so you can be more confident of the outcome. This is a key point projects are risky and it is the job of the project manager to identify, communicate and manage that risk. The Project Management Institute (PMI) defines project management as “the application of knowledge, skills and techniques to execute projects effectively and efficiently “A project is a unique piece of work, with a defined beginning and end and at least one major crisis”. We tend to associate projects with work and, more specifically, with things that project managers do. But we are involved in projects, all of the time, both in work and in our personal lives. And the simple things that we do to decide which new TV to buy or learn a new hobby will serve us well in all types of projects, regardless of size. Managing effective project is about all the activities embarked upon to make sure a selected project is effectively successful. It entails working-out a budget for project, making sure different over-heads such as staffing or materials as well as the overall cost are included with a deadline set for completing the project. It starts with defining the project then planning, execution/implementation, monitoring/control and closing of the project. All these are discussed in this work.

Key words: Project, Portfolio, Scope, Time, Risk, Unique, Temporal Endeavour, Planning, Management, Beginning and Ending.

Introduction

Project; This is a temporary Endeavour undertaken to create a unique product, service or result (PMBOK guide, 2004). It ends when its objectives have been reached or the project has been terminated. It can be large or small and it takes a short or long time to complete. It is an interrelated set of activities with a defined starting and ending points, which results in a unique outcome for a specific allocation of resources (Lee et al, 2013).

In other words, project is an Endeavour which is Temporal, Unique, has a beginning and ending, and involves human and other resources. A successful project is measured as: Its completion on time or earlier than scheduled, not exceeding the agreed budget, meeting the specifications to the satisfaction of the customer and being

at agreed quality. In order to achieve the above success a project must have a well-defined scope, motivated Sponsor (i.e., business engaged), approved budget maintained, willingness of the concerned, management commitment to resolve project problem as they come-up.

Examples of a Small Project are wedding planning, remodeling bathrooms, organizing surprise party, conducting a research effort whose outcome will be aptly recorded. While that of Large projects are managing high technology programs, managing cross cultural issues in global software outsourcing, managing construction projects, developing a new product, service or result, effecting a change in the structure, processes, staffing or style of an organization, developing or acquiring a new or modified information system hardware, constructing a

building, industrial plant or infrastructure, implementing, improving or enhancing existing business processes and procedures.

Diagrammatical Representation of a Project:

Activities such as Marking out Infrastructure, setting-out each building, excavation of the foundation of the buildings, construction of the sub-structure for each unit of the buildings, construction of the super-structure for each unit of the building, electrical work, mechanical work, finishing i.e roofing, painting etc. (Figure 1).

The above diagram depicts the activities involved in the project of construction an estate of thirty (30) housing units by Julius Berger Construction Company, Nigeria. The project has eighteen (18) months (Optimistic) as the shortest time of completion, all things been equal, the longest (Pessimistic) time for completion is twenty-four (24) months (Most likely) and the probable time 'm' for completion is twenty-one (21) months. The activities A are completed before activity B begin, and activities B before C, C before E and E before F. Although, activities B, can begin in another part that completed its A activities, while another type of activities A are yet to be completed elsewhere within the scope of the entire project since this is a very big projects that involves same type of activities in different units within the specified period. (Figure 2).

Using the above variables:

a= 18months =78 weeks

b= 24months =104 weeks

m=21 months=91 weeks, as shown in the diagram below:

The expected time for the completion of the project (all the activities) 't_e'= (a+4m+b)/6

This implies that 't_e' = (78 + 4{91} +104)/6 = (546)/6 = 91weeks.

Program: This is a combination of interdependent set of projects having a common strategic purpose. Just like project, It is often disbanded when results are achieved. It is medium term focused. It is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.

Portfolio: This is a combination of several programs. Typically, it has a long-term focus on achieving specific objectives and has approval authority. This is an organizations group. It manages projects and programs as a portfolio of investments that contributes to the entire enterprise's success.

Project Sponsor: This is the primary customer of the project. He/she usually provides direction and funding for the project.

Project Management

The three main goals of any project are (1) complete the project on time or earlier, (2) do not exceed the budget, and (3) meet the specifications to the satisfaction of the customer. When we must undertake projects with some uncertainty involved, it does not hurt to have flexibility with respect to resource availability, deadlines, and budgets. Consequently, projects can be complex and challenging to manage. Project management, which is a systemized, phased approach to defining, organizing, planning, monitoring, and controlling projects, is one way to overcome that challenge (Slack, et al, Pearson, 2010).

Projects often cut across organizational lines because they need the skills of multiple professions and organizations. Furthermore, each project is unique, even if it is routine, requiring new combinations of skills and resources in the project process. For example, projects for adding a new branch office, installing new computers in a department, or developing a sales promotion may be initiated several times a year. Each project may have been done many times before; however, differences arise with each replication. Uncertainties, such as the advent of new technologies or the activities of competitors, can change the character of projects and require responsive countermeasures.

It is also the application of knowledge, skills, tools and techniques to project activities to meet project requirement. It is a dynamic process that utilizes the appropriate resources of the organization in a controlled and structured manner, to achieve some clearly defined objectives identified as needs. It involves system the organization in a controlled and structured manner, to achieve some clearly defined objectives identified as needs.

There are Ten (10) knowledge areas of Project Management that described as the key competences that project managers must develop. These are

Scope Management: The scope is the most important element to understand about any project. All planning and allocation of resources are anchored to these understanding. As a project manager your most critical responsibility to the organization you work for is scope management.

Time Management: refers to numerous techniques and skills that can help person to make use of available time in the most efficient way and to accomplish goals, task and project within the predetermined period of time. Time management skill varies but not limited to tasks, planning, scheduling, organizing and delegation of functions.

Cost Management: Project management success depends on the ability to manage customer expectation as well as the capacity to maintain a calibrated approach to all project within the portfolio. And while time and resource are always significant, the factor that often has the biggest influence on project success or failure is whether or not the project team can or cannot optimize project output with

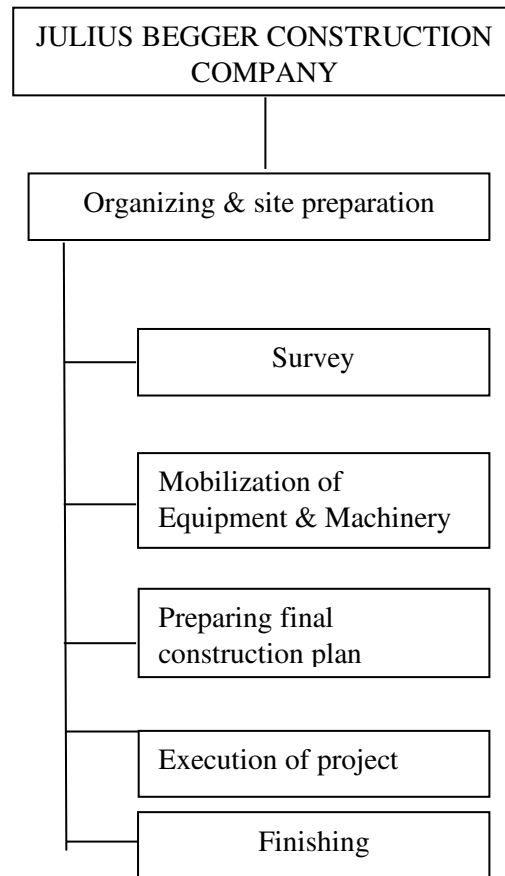


Figure 1: illustrates the example of Julius Berger Construction Company

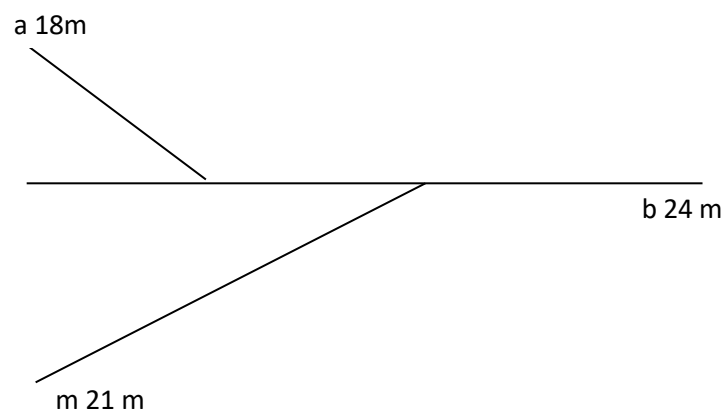


Figure 2: The scope of the entire project as indicated in figure 1

effective cost management.

Quality Management: Quality for project managers applies quality principles to project management itself, as well to the products and services resulting from projects. It

brings the fore front the essentials of project quality management and it is vital link to the success of the business with the focus on the tools and essentials of effective quality management that work for your

organization.

Human Resource Management: It is the efficient and effective deployment of an organizations resources when there are needed. Such resources may include financial resources, inventory, human skills, production resources or information technology. Large organization usually have defined corporate resource management process and resource management techniques to achieve.

Communications Management: Communication is among the most important factors for success in project management. And is the fuel that keeps the project running smoothly, is the glue that hold the project team together. Communication is not just talking, it is also listening, without clear timely unambiguous communication even a small team working together will have major problems.

Risk Management: This is simply defined as identifying, analyzing and managing the uncertainties in a project both positive and negative threats. The benefit of risk management are instrumental to project success. By proactively addressing uncertainties in combination with a strong project management program problem within the project can be decreased by as much as 60to 70%.

Procurement Management: is about establishing, maintaining and closing relationships with supplies of good and services for the project. And there are 4 major processes such as plan procurements, conduct procurements, administer procurements and close procurements. And they are various tools and techniques that are used for conducting procurement

Stakeholder Management: The effective project managers understand that to get results they must create an atmosphere of enablement. A Stakeholder is the person or organization that is actively involved in the project or whose interests may be positively or negatively affected by execution r completion of the project. Stakeholders are the people involved in or affected by project activities. These are project sponsor, project Manager, and project Team, Support Staff, Customers, Users, Suppliers, and Opponents to the project.

Full Integration Management (of all the above listed). Project integration management affects and is affected by all the other knowledge areas. It enables project manager to handle the interactions and the interdependency typically required by effective project management. In conjunction with using the other project management knowledge areas, including scope, time, cost, quality, human resource and communication.

What does manage a Project Entail? Typically, it includes, but not limited to: Identifying requirements, addressing the various needs, concerns and expectations of the stakeholders in planning and executing the project, setting-up, maintaining and carrying-out communications among stakeholders that are active, effective and collaborative in nature, managing stakeholders towards meeting project requirements, and creating project deliverables, balancing the competing project constraints, which include but not limited to; Scope, Quality, Schedule,

Budget, Resources and Risk mannagement.

The specific project characteristics and circumstances can influence the constraints on which the project management team needs to focus. The relationship among these factors is such that if any one factor changes, at least one other factor is likely to be affected. For instance, if the schedule is shortened, often the budget needs to be increased to add additional resources to complete the same amount of work in less time, if a budget increase is not possible, the scope or targeted quality may be reduced to deliver the project's end result in less time within the same budget amount. Project stakeholders may have differing ideas as to which factors are the most important, creating an even greater challenge.

Challenging the project requirements or objectives may create additional risks. The project team needs to be able to assess the situation, balance the demands and maintain proactive communication with stakeholders in order to deliver a successful project.

Some of the best Practices for Successful Project are; plan the work by utilizing a project definition document, create a planning horizon, define project management procedures up front, manage the work plan and monitor the schedule and budget look for warning signs, ensure that the sponsor approves scope change requests, guard against scope creeping, identify risks up front, continue to assess potential risks throughout the project the project.

Importance of Managing Effective Projects: Managing effective projects enables us to map out a course of action or work plan that helps to think systematically and thoroughly for unique task and for specific objectives with managing variety of resources for time bound.

Project Management Processes: Project Management is accomplished through the appropriate application and integration of the forty-seven (47) logically grouped project processes, which are categorized into five (5) process groups. These are;

Project Defining: This involves

Defining the scope and Objectives: The statement of a project's scope, time frame and allocation of resources is essential in managing it. This statement is what is referred to as the project objective statement. The scope provides this statement and captures the essence of the desired project outcomes in the form of major deliverables that are concrete part of the project. A specific statement of allocated resources makes it possible to make adjustments to the scope of the project as it proceeds.

Selecting the Project Manager and Team: Once the project is selected, a project manager must be chosen. The qualities of a good project manager should be well aligned with the roles a project manager must play as below;

Facilitator: The project manager often must resolve conflicts between individuals or departments to ensure that

the project has the appropriate resources for the job to be completed. Successful project managers have good leadership skills and a system view, which encompasses the interaction of the project, its resources, and its deliverables with the firm as a whole.

Communicator: Project progress and requests for additional resources must be clearly communicated to senior management and other stakeholders in a project. The project manager must also frequently communicate with the project team to get the best performance.

Decision Maker: Good project managers will be sensitive to the way the team performs and be ready to make tough decisions, if necessary. The project manager must organize the team meetings, specify how the team will make decisions, and determine the nature and timing of reports to senior management.

-Selecting the project team is just as important as the selection of the project manager. Several characteristics should be considered such as:

Technical Competence: Team members should have the technical competence required for the tasks to which they will be assigned.

Sensitivity: All team members should be sensitive to interpersonal conflicts that may arise. Senior team members should be politically sensitive to help mitigate problems with upper-level management.

Dedication: Team members should feel comfortable solving project problems that may spill over into areas outside their immediate expertise. They should also be dedicated to getting the project done, as opposed to maintaining a comfortable work schedule.

Recognizing Organizational Structure

The organizational structure of a firm (shown below) determines the relationship between the project manager and the project team members as it affects the project management.

Functional: This is a situation whereby the project manager has less control over the project timing as the project is partially under the control of another personnel by extension.

Pure Project: The project manager has full authority here, whereby, the line of authority is simplified and it is particularly effective for large projects that consists of enough work for each team member to work full time.

Matrix: This structure is a compromise between the functional and pure project structures. The project managers of the firm's projects, all report to a program manager who coordinates resource and technological needs across the functional boundaries. The structure allows each functional area to maintain control over who works on a project and the technology that is used. The team members in effect have both the project manager and the department manager as their bosses. That is, a

two-line of authority.

Project Planning: This is formulating a plan that identifies the specific work to be accomplished and a schedule for completion. This involves;

Defining the work breakdown structure: The work breakdown structure (WBS) is a statement of all work that has to be completed. Perhaps, the single most important contributor to delay is the omission of work that is germane to the successful completion of the project. The project manager must work closely with the team to identify all activities. An activity is the smallest unit of work effort consuming both time and resources that the project manager can schedule and control. Typically, in the process of accumulating activities, the team generates a hierarchy to the work breakdown. Major work components are broken down to smaller tasks that ultimately are broken down to activities that are assigned to individuals. (Figure 3).

Diagramming the network: Network planning methods can help managers monitor and control projects. These methods treat a project as a set of interrelated activities that can be visually displayed in a network diagram, which consists of nodes (circles) and arcs (arrows) that depict the relationships between activities. The project managers should include the following:

Considering projects as networks forces project teams to identify and organize the data required and to identify the interrelationships between activities. Networks enable project managers to estimate the completion time of projects, an advantage that can be useful in planning other events and in conducting contractual negotiations with customers and suppliers. Network methods enable project managers to analyze the time and cost implications of resource trade-offs.

Developing the schedule: A key advantage of network planning methods is the creation of a Schedule of project activities that will help managers achieve the objectives of the project. Managers can estimate the completion time of a project by finding the critical path, identify the start and finish times for each activity for a project schedule, and calculate the amount of slack time for each activity.

Critical Path is a crucial aspect of project management in estimating the time of completion of a project. If each of the activities in the construction of an estate of 30 housing units is done in sequence, with work proceeding on only one activity at a time, the time of completion would equal the sum of the times for all the activities.

Analyzing cost-time trade-offs: Keeping costs at acceptable levels is almost always as important as meeting schedule dates. The reality of project management is that there are always cost-time trade-offs. For example, a project can often be completed earlier than scheduled by hiring more workers or running extra shifts. Such actions could be advantageous if savings or

Project Management Model

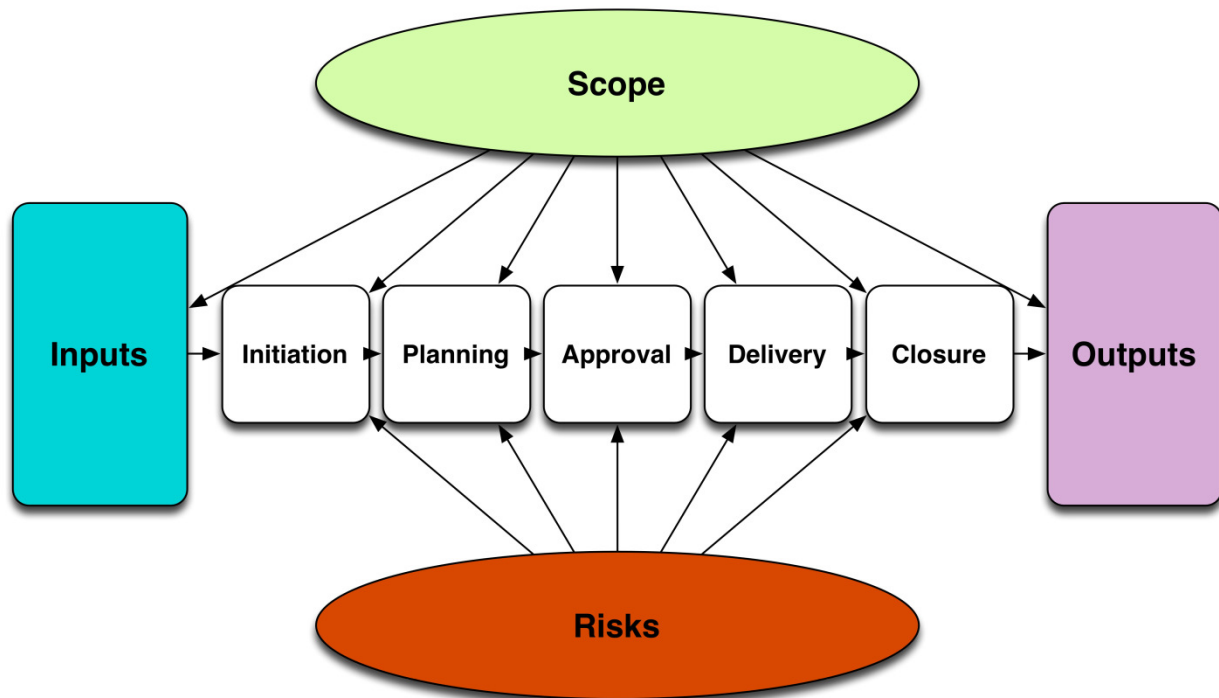


Figure 3: Illustrates the processes of project stages

additional revenues accrue from completing the project early.

Total project costs are the sum of direct costs, indirect costs, and penalty costs. These costs are dependent either on activity times or on project completion time.

Direct costs include labor, materials, and any other costs directly related to project activities.

Indirect costs include administration, depreciation, financial, and other variable overhead costs that can be avoided by reducing total project time:

The shorter the duration of the project, the lower the indirect costs will be. Finally, a project may incur *penalty costs* if it extends beyond some specific date, whereas an *incentive* may be provided for early completion.

Assessing risks: Risk is a measure of the probability and consequence of not reaching a defined project goal. Risk involves the notion of uncertainty as it relates to project timing and costs. Often, project teams must deal with uncertainty caused by labor shortages, weather, supply delays, or the outcomes of critical tests.

Risk-Management Plans is a major responsibility of the project manager at the start of a project to develop a risk-management plan, which identifies the key risks to a project's success and prescribes ways to circumvent them. A good risk-management plan will quantify the risks,

predict their impact on the project, and provide contingency plans. (Figure 4).

Risk management includes;

Identify Risk: This step is most effective when done very early in the project. Having a brainstorming session with team member to list out several potential risk items is a good beginning. Include all potential risks, including the risks that are already known and assumed, such as scope creep. Include threats that may stem from human threats, operational issues, procedural impacts, financial threats and natural events.

Assess. This will enable you to view progress and stay on top of each risk. A good risk register or log will include a risk description, ownership, and the analysis of cause and effect. This register will also include the associated tasks. A good risk register is a valuable tool in communication project status. It should be easily maintained and updated. By remaining current and up to date, the risk register will be viewed as a relevant and useful tool throughout the project lifecycle.

Prioritize Risks. Once the risks are identified, the next step is to assess the likelihood of the threat being realized. Some risks will have a much higher impact. One approach

Risk Management Process

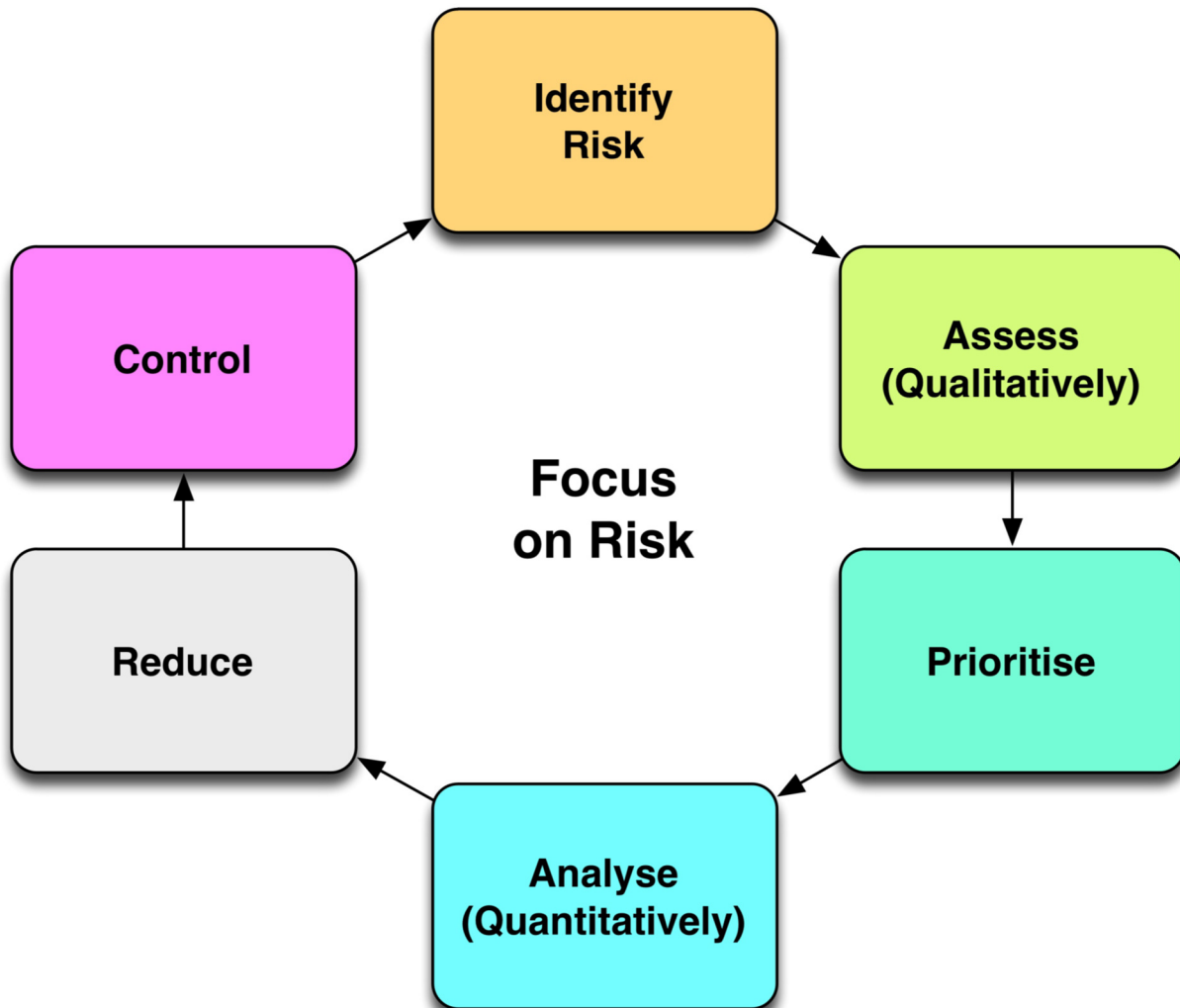


Figure 4: illustrates the stages involved in the risk management processes.

to estimating the risk is to make a best estimate of the probability and multiply this by the amount it will cost to set things right, if it happens. This will provide an impact value associated with the risk. Another approach is to assign each risk a numerical rating, such as a scale from 1 to 5. Do you have any potentially large events that can cause huge losses OR gains? These will be the number one priority. Ensure that your priorities are used consistently and focus on the biggest risks first and the lesser priority risks as applicable.

Analyse the Risk. What is this risk about? What are the effects of this risk? What causes will make this risk occur?

List the different causes and circumstances that affect the risk likelihood; doing a simulation to illustrate how likely the project is to finish on a specific date or at what cost. Gaining a sound understanding of the risk is a solid foundation for an effective proactive response and provides insights to manage the risks.

Reduce. Who is going to be responsible for what risk? This person will be accountable to optimize a specific risk-either decrease the threat or capitalize on the opportunity. They will identify the possible triggers to their assigned risk. Assigning ownership is also important in establishing an effective and clear communication channel. All involved

with the project know whom to call when questions arise.
Control the Risk. Plan out and implement a response for each risk. Typically, you will have four options – Transfer the risk (subcontracting scope or adding contractual clauses), risk avoidance (eliminating the source of the risk, such as changing a vendor), risk minimization (influencing the impact) and risk acceptance.

Risk Identification: A more disciplined process involves using checklists of potential risks and evaluating the likelihood that those events might happen on the project. Some companies and industries develop risk checklists based on experience from past projects. These checklists can be helpful to the project manager and project team in identifying both specific risks on the checklist and expanding the thinking of the team. The past experience of the project team, project experience within the company, and experts in the industry can be valuable resources for identifying potential risk on a project.

Constraints and resolution in managing effective projects

Risk exploitation: Exploiting means to take “whatever measures” it takes to make sure that the risk or the uncertain event “does happen”. For example, consider you are managing a project and you are required to complete the project in six months. According to the contract, if you finish the project within four months, you will earn double of the project fee. If you want to exploit this, you might take out resources from other on-going projects and assign them to this project, you might announce a big incentive to team if they make this happen, you might hire an expert consultant, and you may ask your resources to work overtime etc.

Risk Mitigation: After the risk has been identified and evaluated, the project team develops a risk mitigation plan, which is a plan to reduce the impact of an unexpected event. The project team mitigates risks in the following ways: Risk avoidance, Risk sharing, Risk reduction, Risk transfer. Each of these mitigation techniques can be an effective tool in reducing individual risks and the risk profile of the project. The risk mitigation plan captures the risk mitigation approach for each identified risk event and the actions the project management team will take to reduce or eliminate the risk.

Risk Evaluation: After the potential risks have been identified, the project team then evaluates the risk based on the probability that the risk event will occur and the potential loss associated with the event. Not all risks are equal. Some risk events are more likely to happen than others, and the cost of a risk event can vary greatly. Evaluating the risk for probability of occurrence and the severity or the potential loss to the project is the next step in the risk management process.

Project Execution/Implementation: This involves all the activities in line with the planned objectives, embarked on by the concerned individuals from the beginning to the end

of the project. And it also involves the assigning of people to team work so that it introduces them to each other in other to developed interpersonal relationship among themselves so that to carry the work as a team work and any person may know his role in this building project of 30 housing unit.

Project Monitoring and Controlling: This is also known as” check and act’ ‘A good tracking system will help the project team achieve this goal.

Monitoring and Controlling process oversees all the tasks and metric necessary to ensure that the approval and authorized project is within scope, on time and on budget so that the project proceeds with minimum risk. The process in that the approval and authorized project is within scope, on time and on budget so that the project proceeds with minimum risk. The process involves comparing actual per performance with planned performance and taking corrective action to yield the desired outcome when significant differences exist. This process is continuously performed throughout the life of the project. For this tracking system to work effectively, information is collected by;

Open issues: One of the duties of the project manager is to make sure that issues that have been raised during the project actually get resolved in a timely fashion. The tracking system should remind the project manager of due dates for open issues and who was responsible for seeing that they are resolved.

Risk status: it should provide the status of each risk to project delays specified in the risk management plan so that the team can review them at each meeting.

Schedule status: A tracking system that provides periodic monitoring of slack time in the project schedule can help the project manager control activities along the critical path. Periodic updating of the status of ongoing activities in the project allows the tracking system to recalculate activity slacks.

Project Closure: End the cycle: This is also known as Project close out. It is an activity that includes writing final reports, completing remaining deliverables, and compiling the team’s recommendations for improving the project process of which they were a part. Whatever members of the team learned will be applied to other projects that might be assigned to them in the nearest future. It is an activity that many project managers forget to include in their consideration of resource usage. The purpose of this final phase in the project life cycle is to write final reports and complete remaining deliverables. An important aspect of this phase, however, is compiling the team’s recommendations for improving the project process of which they were a part. Many team members will be assigned to other projects where they can apply what they learned. (Figure 5).

Conclusion

A well-managed project is said to be successful and a

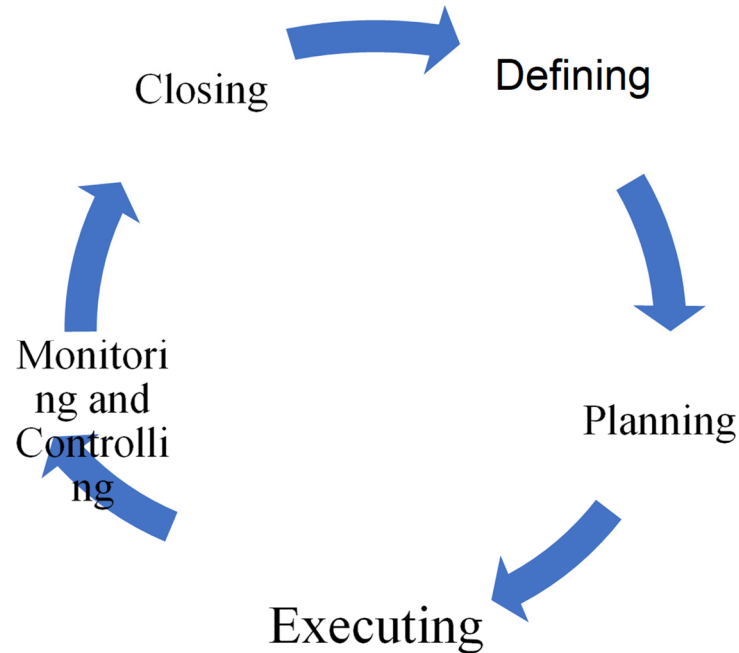


Figure 5: Project Life Cycle

successful project is measured by the following; Meeting the scope, time and costs goals. Project satisfying the customers/sponsor even if the scope, time and or costs goals were not met. The results of the project meeting its main objectives, such as making or saving certain amount of money, providing good returns on investment, or simply making the Sponsor happy. Effective project managers provide leadership by example. A leader focuses on long-term goals and big picture objectives while aspiring people to reach those goals, a manager deals with the day-to-day details of meeting specific goals, Managers do things right, leaders do the right thing. Leaders determine the vision while managers achieve the vision. Project Managers often take on the roles of both Leaders and Managers.

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