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By Hammood Nadheer Mansoor Ati

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Implementation of a Successful Project Management Method to Serve Modern Organizations

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A thesis was submitted to the College of Business Administration in Partial Fulfillment of the
Requirements for the Degree of Master of Science in Operations and Project Management

Southern New Hampshire University

July 2015

Supervised by Mr. David Lendry, PMP

Abstract

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The project management arena requires much knowledge, many skills, techniques, tools, and a high level of experience in order to achieve satisfactory results and to add value to organizations. The scope of this paper is to address and discuss many important aspects needed to succeed in project management within Iraqi organizations because Iraqi businesses are developing and expanding their products into global markets. However, most Iraqi organizations struggle to implement and select productive programs and projects that will fit in with their strategic objectives. Therefore, a primary aim of this paper is to discuss the factors that make project management more effective and successful in these organizations. Also, there are many challenges and risks that project management can face during project processes that can have an effect on an entire project and sometime cause project failure. In addition, many organizations have problems with project teams, such as, differences in culture and behavior within the same team. Therefore, project management should have the organizational skills, knowledge, experience, and technical skills in order to meet the project requirements.

This paper contributes and clarifies the understanding of project management field and how it works in an efficient manner. The results will help Iraqi organizations to utilize project management skills and knowledge. Also, these skills will help them to reduce budgets and increase the value of the final products within a reasonable time.

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Content of the Thesis

This thesis consists of five chapters. The first chapter is devoted to discuss general information of the project. Also, it contains a comprehensive view of project management with all of its factors. Chapter two discusses myriad skills that project management could utilize. Also, it addresses factors that lead to success in projects. Chapter three illustrates the description of the Agile method and the differences between the Agile method and Traditional methods. Chapter four describes project portfolio management (PPM). Chapter Five discusses the impact of risk management.

Chapter 1

Overview of Project Management

Introduction

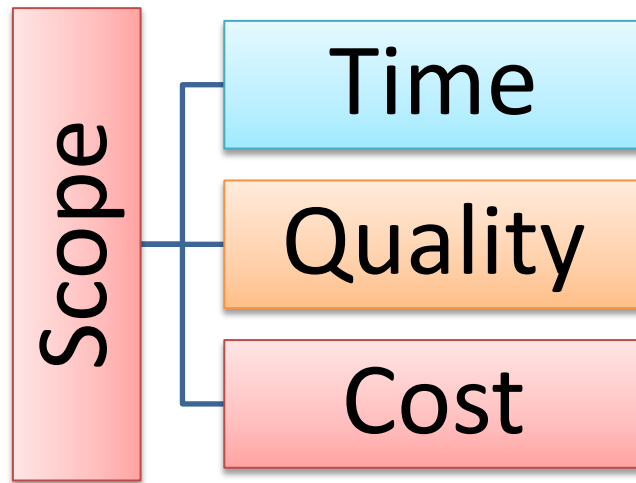
Most large and medium sized companies have multiple departments that work together to operate and deliver its mission. Project management, formal or informal is a fundamental requirement for most companies to achieve their strategic' goals and improve the bottom line of the organization. In addition, project management processes can improve the organizations' capabilities and the implementation of projects thereby increasing the probability of success. Project managers create plans to achieve project targets and put everything in place, such as how many resources needed, budgets, and scheduling. Project managers implement different methods that can guide the project teams in the right direction. As projects develop, they may grow more complex with resource conflicts; this can make the situation more difficult to meet the project requirements. In addition, every company is engaged in complex projects within competitive environments inside and outside its business; these companies should have good project management to handle these complexities.

Successful project managers have the ability to deal with complex environments and help their teams to solve multiple problems in high pressure situations. Also, successful project managers have knowledge of the performance requirements that enables him or her to run projects in an effective manner. Therefore, project managers are a very critical resource in an organization, because the organization relies on their project managers to lead project teams that should achieve their organizational objectives. They know the processes of the project and how to put everything in the budget and schedule.

1.1 What is a Project?

According to author [25], "A project is a temporary endeavor undertaken to create a unique product, service, or result" (p. 3). A project is considered a success if it achieves acceptable results. In order to do this, the project teams need to satisfy their customer requirements by adding value. The important characteristics of a project are that it will not have repetitive work and that it will have a beginning and completion date, use specific resources, have specific plans, utilize certain people and have goals for cost, time, and quality (See figure 1).

Figure 1.1: Project defining



Source: [42]

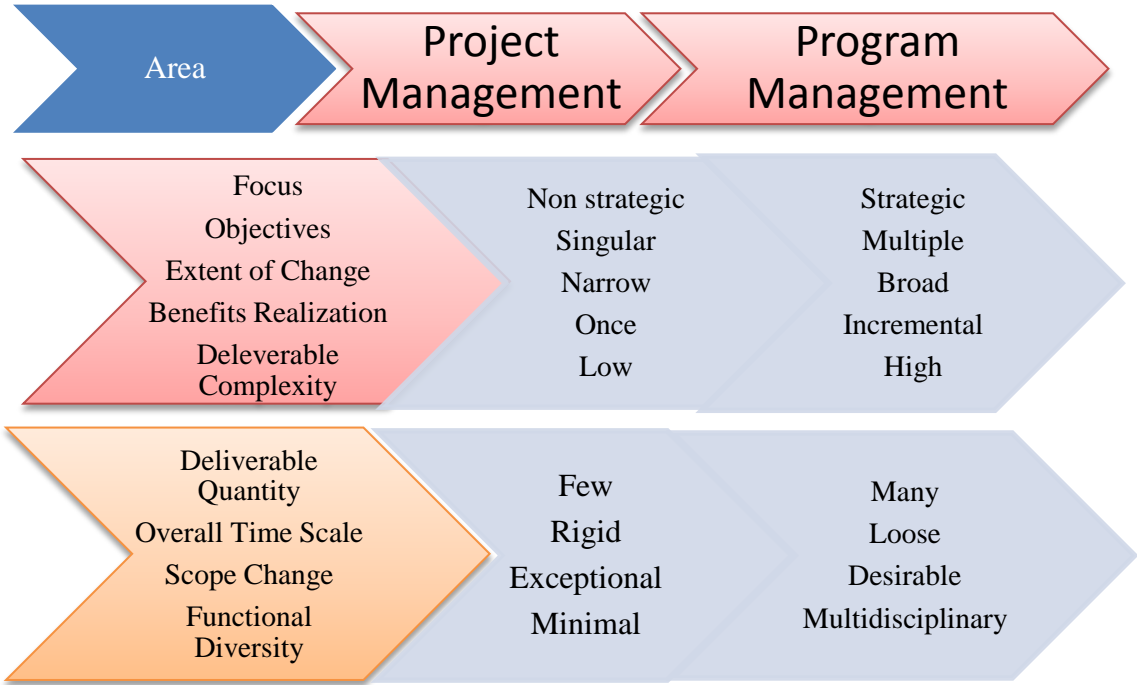
The Project Triangle is depicted in Figure 1.1. All projects are constrained Time, Costs or Scope/Quality. If time or the completion date of a project is constrained and the project falls behind schedule the project manager can either add additional resources and increase cost or reduce the scope/quality to keep the cost down. In addition, the author [9] said that a project has two important characteristics; first, each project has established a beginning and a completion date (end date); the second is that each project produces important and unique results in their services and/or products. Therefore, projects will contribute many benefits to the organizations and customers by achieving the desired results with acceptable quality. Project team members are responsible to achieve good results that will move the projects forward in their business and help them to open the door into the global marketplace. Occasionally, some projects might be involved in the same activities and deliverables, etc. [25].

1.2 Program

PMI defines a program as “a group of related projects, subprograms, and program activities managed in a coordinated way to obtain benefits not available from managing them individually.” Program management helps project

managers to determine the ideal approach for dealing with the interdependencies of projects [25]. This definition shows that the program is different from the project. They deliver products and focus on how to deliver value to organizations and benefits to the management. Although there are similarities between projects and programs, such as focusing on delivering value and benefits to organizations, there are many differences, such as in table 1.1. These differences make each one need unique skills and knowledge to run the organizations' objectives effectively.

Table 1.1: Project vs Program



Source: [14]

1.3 Project Manager Responsibility

The author [25] defines a project manager as “the person assigned by the performing organization to lead the team that is responsible for achieving the project objective” (p. 16). Project managers have the responsibility to communicate and work with other managers such as the portfolio manager, the program manager, and the operations manager in order to run the project smoothly and achieve the organization’s objectives. Also, project managers work in

cooperation with other important roles to ensure that the projects' objectives are heading in the right direction. Project Managers are responsible to bring a project to a successful conclusion.

1.4 Project Lifecycle

The author [25] defined a project life cycle "as the series of phases that a project passes through from its initiation to its closure" (p. 37) All projects have time constraints, they have a period for the project to be completed. The lifecycle of a project should be performed in steps, which have specific work functions from beginning to end and have specific and important goals for the organization. Also, the lifecycle of the project can be broken down or divided by partial goals, specific milestones, intermediate deliverables, and available financial [25]. This will help project managers to manage and focus on the process of projects from the beginning, in order to accomplish the projects' goals. A project lifecycle will usually begin very slowly, then ramp up to its peak as the project comes to close and achieves the desired results. The life cycle of a project contains four important stages according to [15].

- 1.4.1 **Defining:** In this stage, the project manager determines the scope of the project. Also, he or she identifies the project deliverables. Project managers include team members, stakeholders, and others who have an interest in the project in this process. Also, the goal for project managers is to define the projects scopes, goals, tasks, specifications, and responsibilities of the project.
- 1.4.2 **Planning:** This stage will determine all activities that will be involved in the project life cycle. The project manager will lead the team through the creation of a work Break down Structure (WBS). They will create schedules, cost estimates, risks plans and identify resource requirements. Project managers will identify all requirements and constraints to complete the project. Also, in this stage, they will define a resource requirements and skills required for the project. They will assign resources to tasks of the projects. A project plan will help project managers ensure that the project is on the right track in order to accomplish the project' objectives.
- 1.4.3 **Executing:** In this step, project managers will monitor and control progress of the project. They will communicate to stakeholders and produce status reports, conduct status meetings and using those resources for their projects. Most importantly they manage necessary changes and revisions that may come about. They monitor and control risks and issues.

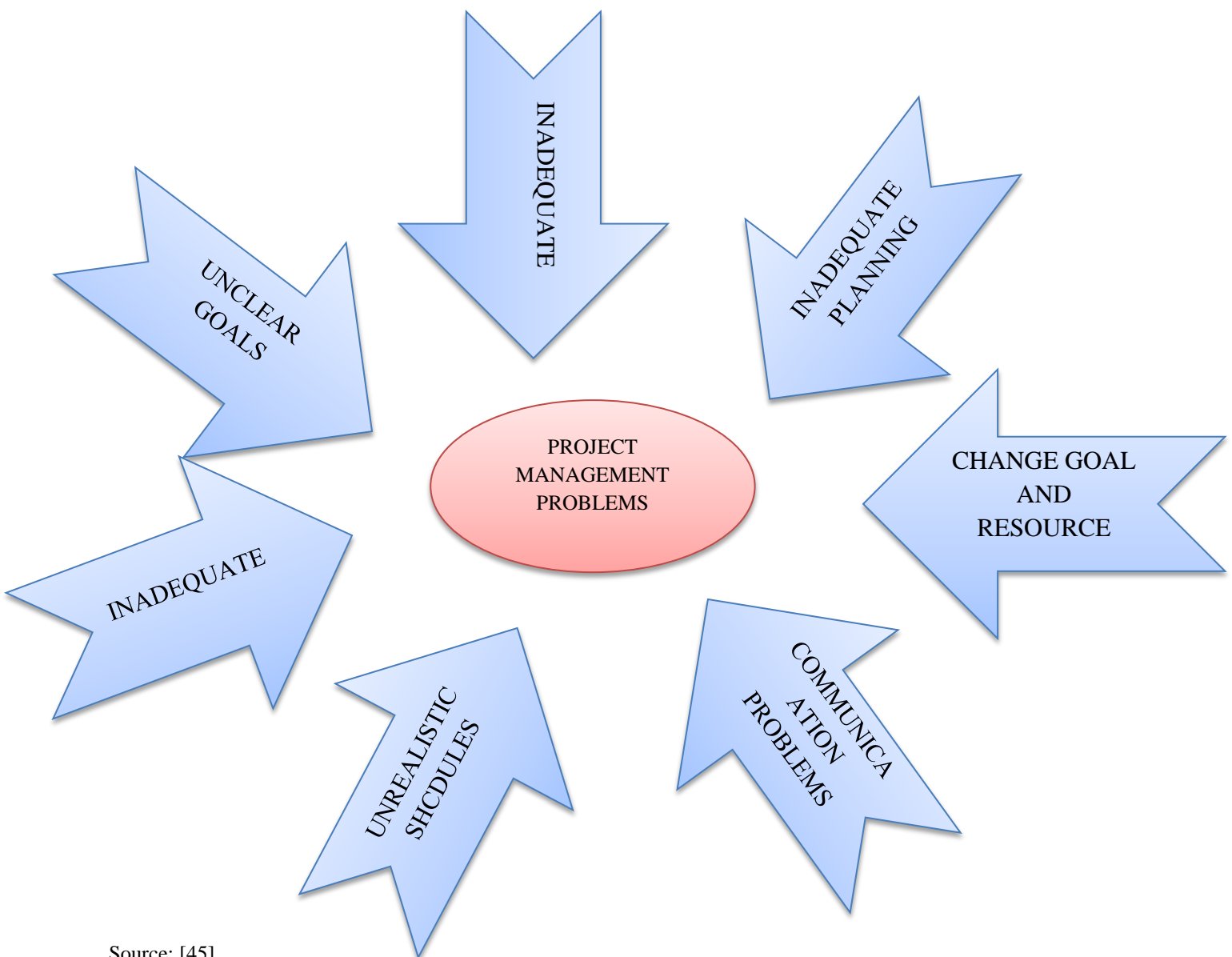
1.4.4 **Closure:** Project should meet two important steps: deliver the final product to the market, customers and then review of the project. However, some projects can be cancelled for multiple reasons. These projects should follow the same closeout process. The project manager and team members should close the project if the critical project aspects have been reached and delivered. Also, they should evaluate the project and release resources as well as transfers all important documents

1.5 Project Management Office

According to author [25], “Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (p. 5) Project management requires skills and knowledge to implement projects efficiently and tie the projects to the organization's goals in order to reach strategic results. The author [25] defines the Project Management Office (PMO) “as a management structure that standardizes the project-related governance, processes and facilitates the sharing of resources, methodologies, tools, and techniques.” The PMO in an organization has many types of roles, such as support, directive and control (p. 10). This means that the PMO is a department within an organization that executes and maintains criteria for project management. The main objective of the PMO is to monitor and control projects to achieve the organization’s goals. Therefore, it has become an important factor for the success of project management in many organizations. As development in the global market increases companies must face competition within those markets; these companies have to pay more attention to the Project Management Office. This can be through various activities and processes in the organization such as training, education, etc. The areas of knowledge in project management include: project scope, cost control, human resources, project quality, time, project risk, stakeholders' management, communication and the integration of all of these things [28]. Project managers may face challenges and problems during the project life cycle if they do not (See figure 1.2). In addition, the competition is growing more in the global business; this situation creates many problems that influence project management missions. For example, in Harvard Business School BAE case study (Automated Systems Denver International Airport Baggage-Handling System) [18], the project managers and team members had the knowledge necessary to correct the situations. Their inability to communicate effectively interfered with their ability to deal with risks and the results delayed the schedule and had an effect on the entire project. In this case study, project managers and their teams would have benefited from better communication skills that would have helped them to handle those risks. Therefore, they should apply their knowledge that comes from learning, experience and practice in order to succeed in

their projects. Figure 1.2 illustrates factors reasons that could contribute potential problems within project management. For example, when project managers have inadequate resources and inadequate planning, they could face problems that could possibly impact the entire project. Also, some organizations may change the projects' scope /goals and resources while the project is in its process, this may cause the project to fail. The question is how project managers should resolve these problems and what skills and knowledge project managers should have in order to fix them. This topic will be discussed in more detail in chapter five.

Figure 1.2: Project Management Problems



Source: [45]

In addition, there is a lot of knowledge and necessary skills that help project managers to run their projects in the right way, such as dealing with many activities at the same time, organizing all processes within the project, motivating project team members, encouraging them and communicating with them. The Project Management Office (PMO) should give appropriate support to their project managers and team members and coach them in order to achieve its objectives. Also, the PMO should provide suitable training to its project managers and their teams; this way the PMO can develop project managers and meet the project requirements. According to the author [15], the functions to define project management are:

- 1.5.1 *Organizing:*** In this step, project managers should allocate and organize resources; these resources are equipment, personnel, facilities, materials, and finances. Also, it is how to coordinate them to work together.
- 1.5.2 *Leading:*** Assembling the right team members and motivating them, encouraging them, sharing the project's goals with them, and trying to understand their needs is the quality of leadership.
- 1.5.3 *Controlling:*** Project managers should evaluate the progress of the project and apply change when it is necessary to bring it back on path. Therefore, the project managers' jobs are to make sure that the project is under control and that the project is going on the right track. They must know how to handle the project's difficulties, such as risks and challenges because they are in charge of the project even if it fails.

1.6 What are the values and qualities that project management can bring to organizations?

The project manager contributes to high quality products, services and customer satisfaction, provide more predictability to the organizations, quickly complete projects, develop work environments, and so on. Project managers can control resources and achieve successful results. Project managers can also reduce the cost of projects by setting up solid plans and estimating the costs of achieve them. PMOs help organizations put the procedures for project management in place and to handle challenges that an organization could face on their projects. In addition, an important value that project management brings to the organizations is to control the changes within a project in order to keep projects on track. Other important benefits that project management brings to the organizations are [5]:

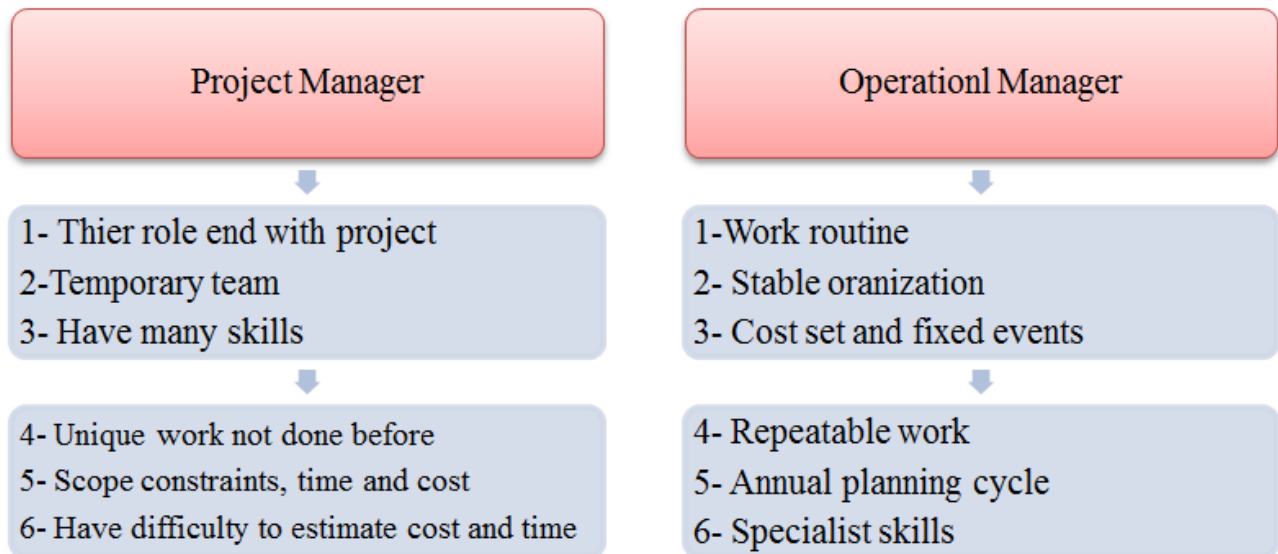
- Finishing projects more rapidly
- More predictable and focus on metrics
- Cost effectiveness

- Have good solutions and plans
- Know how to resolve problems and future risk more rapidly
- Communicate more effectively and build productive teams
- Improved financial management
- Developed workplace environment

1.7 Operations Management

According to the author [25] “Operations are ongoing endeavors that produce repetitive outputs, with resources assigned to do basically the same set of tasks according to the standards institutionalized in a product life cycle” (p. 13). The concept of operation management is to process inputs such as materials, labors and resources from all departments in the organization and transform to outputs such as goods and services efficiently in order to maximize the profit and minimize the costs. Operation management is one of the most important things that help companies contact with their customers. It ensures and reviews all plans that it sets to work smoothly and in the time that it wanted. There are many differences between project managers and operation managers in their functions such as in the table below:

Table 1.2: Project Managers Vs Operation Managers



Source: [43]

1.8 Project management Tools

Project management tools can assist project managers to achieve project targets and complete their projects with good quality. Project managers deal with different tasks and challenges in the organization; these tasks require some tools to handle and make the project easier to manage and control. However, it does not mean these tools will meet project needs. Many important tools can assist project management to accomplish the project requirements and implementation tasks. These tools not only help project managers with progress of the project but also help project team member and stakeholders understand the processes of the project [24]. The Project Management Organization should select the tools to manage their projects to ensure consistency in reporting and process. Project scheduling software such as Microsoft Project is one of the most important tools for project managers because these tools are very important for controlling projects. Microsoft Project features the ability to produce Project schedules, Gantt charts, Work Breakdown Structure (WBS), baseline, etc. Through these tools, project managers can better manage a project by knowing what the start date is, completion date (completion date might be changed if there is a delay in the project), how much project costs, resources needed, Earned Value Management (EVM), etc. EVM is a project management technique that helps project managers to measure the progress of the project and performance in effective manner. EVM is a method that combines resource, schedule, and scope to evaluate project progress and performance. This can be through integrating the cost baseline with scope baseline along with project schedule baseline in order to help project manager measure the duration of the project. Thus, all work tasks are scheduled, budgeted and planned in time- phased increments, which is a performance of the project measurement baseline. This tool will help project management to estimate accurate actual cost and completion project time. This can be through providing a quantitative basis data for forecasting required resources that are needed to finish the project. Also, this is the value of the work achieved based on project budgeted or planned value. Earned Value is a very important tool for successful project management. There are 32 criteria for the complete earn value management system. These criteria are very important to start the project process. However, the most commonly that project management used and necessary to employ earned value are:

- Define the project scope (deliverables and objectives).
- Identify who should perform the defined project work; this should include the determination of critical procurements.
- Schedule and plan the defined work and manage remaining work.
- Estimate the requirement resources for project.

- Identify the project metrics in order to convert planned value into earned value.
- Monitor the earned value performance in order to determine schedule and cost departures from the cost variance (earned value less the actual costs) and schedule variance (earned value less the planned value).
- In order to use earned value data, project managers should estimate the final requirement costs based on actual project performance [19].

EVM can be used for all type of projects in any industry field. The EVM monitors and develops three project dimensions, such as Planned value (PV), Earned value (EV), and Actual cost (AC):

- Planned value (PV): In this step, the budget assigned to project schedule and plan can be authorized.
- Earned value (EV): In this step, the work performs in terms of the budget can be measured.
- “Actual cost (AC) is the realized cost incurred for the work performed on an activity during a specific time period” [25].

By using these tools, project managers will control the entire project and should always know what the next step is. The question is “should the project team know these tools?” The answer is that they should at least be aware of these tools because these people are part of driving the project. For example, if the project team does not know these tools, they could create conflicts with project manager and affect the project target. This happened in Harvard Business School Case “Teradyne Corp: The Jaguar Project”[12], when project managers attempts to make improvements with data provided by the project tools, the project team did not know how to use these tools properly or know how to interpret the date; this resulted in a negative effect on the project. Therefore, the proper use of these tools is the best way to improve the entire organization by achieving the desired conclusion.

Chapter Two

Project Management skills and knowledge

Introduction

Projects can be difficult to manage because they are complex, the availability of resources and the change that will most likely occur throughout the process of the projects. Organizations are concerned about what skills and knowledge their project managers require to deliver their projects in order to achieve their goals. The author [25] identifies nine project management knowledge areas project managers must know. They are: integration, time, scope, human resources, quality, risk, communication, stakeholder, and procurement management. These knowledge areas help project managers to monitor the progress of the project and handle the complexity of the situation. Thus, project managers should apply and utilize the skills in these knowledge areas for their projects.

2.1 The most important skills and knowledge

One of the most important skills that project managers need to have is how to listen, learn from others, communicate to stakeholders and motivate team members that most likely do not report directly to them. No matter how many skills project managers have, they need to be good listeners because this is how they can best determine what is really going on in a project. Successful project manager have specific skills and knowledge which enable them to diagnosis issues, risks, challenges, etc. Table 2.3 shows six important skills for successful project managers [38].

Table 2.3: the Most Important Skills for Project Managers

<p>Communication Skills</p> <ul style="list-style-type: none"> - Listening - Persuading 	<p>Team Building Skills</p> <ul style="list-style-type: none"> - Empathy - Motivation -Esprit Corps - Creativiy 	<p>Leadership Skills</p> <ul style="list-style-type: none"> - Energetic - Vision - Delegates - Positive Attitude - Encourager
<p>Organizational Skills</p> <ul style="list-style-type: none"> -Planninf - Goal Setting - Analyzing 	<p>Copying Skills</p> <ul style="list-style-type: none"> - Flexibility - Creativity -Patience - Persistence 	<p>Technological Skills</p> <ul style="list-style-type: none"> - Experince - Project Knowledge

Source: [38]

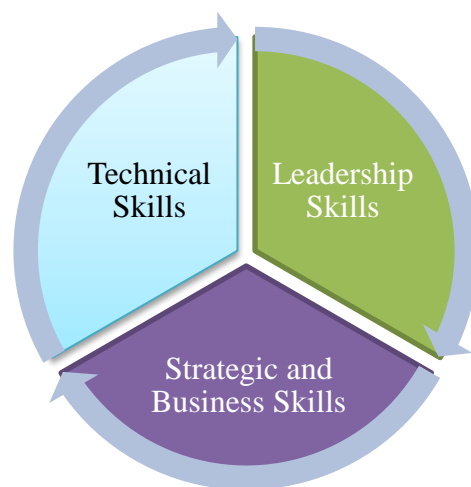
Project managers must have these skills to enable them to manager their projects and to transfer the projects' processes to the teams in order to achieve the results that lead to a project's success. Project success is defined as the ability to achieve the project results (high value and quality), within the established budget and by the scheduled due date. With all these skills, project managers can manage risks and challenges in their projects. They can create accurate schedules, budgets, resource plans, and create solid plans for their projects. Project managers must know how to apply these skills for different types and sizes of projects to achieve the projects' goals.

Also, table 2.3 illustrated that leadership skills are very important for project managers. However, this table is missing one of the most imporant skills for today's projects and it has significant effect on development projects which is talent triangle [36]. Many project managers do not know how to deal with diverse cultures. Therefore, they could face many problems with team members. They need to learn how to communicate with others in order to avoid conflicts. It helps project managers to persuade others with their ideas. The skills requirements for success as project managers will be discussed next.

2.1.1 Leadership Skills

Former US President General Eisenhower said that the leader is someone who can bring the following features together in order to achieve their goals. “The leaders’ features are creates an inspiring vision of the future, motivates and inspires people to engage with that vision, manages delivery of the vision and coaches and builds a team, so that it is more effective at achieving the vision” [11]. Successful leadership skills are one of the essential elements in developing projects teams. Applying these skills can improve a project manager’s ability to effectively lead projects. Project managers should have leadership and the technical skills and know how to mix these skills to accomplish their goals. By having technical skills, project managers can control projects and know how to build solid plans. According to the author [37], the result of research shows that over 90 percent of companies said that strategic and technical skills can be teachable (p. 12). This means that these skills come from practice, training, education, and other experiences. However, PMI shows in its research that it is not enough for project managers to have only technical project management skills in today’s environment because of the increase of the competitiveness in the global marketplace. “Companies are seeking added skills in leadership and business intelligence-competencies that can support longer-range strategic objectives that contribute to the bottom line” [37]. The Talent Triangle skills are a mix of leadership skills, technical project management skills, business expertise and strategy (See figure 2.3). This skill helps to improve and develop project managers’ skills in order to achieve the evolving requirements in their careers.

Figure 2.3: Talent Triangle



Source: [36]

Leadership skills are the ability to motivate and inspire team members, engage them with strategic vision and run the project with high quality to the end. A good leader possesses the ability to create and build confidence with their teams in order to inspire team members throughout the lifecycle of a project. One of the best ways to gain leadership skills is to get appropriate training to help project managers to refine and apply their methods [34]. The author [37] said that 66 percent of organizations believe that leadership skills are the most significant for project management in order to achieve success. Also, 66 percent of organizations said that these important skills can be teachable (p. 12).

Project managers with leadership skills can motivate their teams to handle difficulties and project risks that arise in projects. Project managers who possess leadership skills will not give up under any circumstance and keep their projects on track. They know how to set plan to accomplish the organization's strategy. Also, leadership skills help project managers' measure customer satisfaction and take critical actions.

2.1.2. Communication Skills

Project manager communication skills are essential for project success. It not only means project managers are presenting their messages, but also it means they have to transfer their knowledge, solve problems and share project visions. They can provide and get the right information. Communication skills include being good at listening, speaking and writing, The fact is that a project manager spends most of his or her time communicating with stakeholders, teams and senior managers for resources, support or other needs; if they do not have strong communication skills, they cannot persuade them and could lose the important opportunity of being successful. This is the way that project managers can provide effective information to others. The author [25] shows that there are five categories of communication, but not limited to these:

- Internal and external communications: with project teams, customers and others
- Formal and informal communications: project reports, charter, memos and emails
- Vertical, horizontal and across communications: up and down and across with peers
- Official and unofficial communications: annual report, newsletters, and off the record
- Oral and Written, and verbal and nonverbal communications: voice inflection and body language

Project managers should know all of these important types of communication in order to succeed in their career path. Also, [25] provides three important project communication skills that help project managers to run the projects efficiently.

2.1.2.1 Plan Communications:

This is one of the most important components of project management. This is to document and identify methods to communicate efficiently with team members, stakeholders and others who are involved in the projects [25].

2.1.2.2 Manage Communications:

This communication is the process of managing the projects based on project management information. It is to allow communication to flow among stakeholders and others in efficient ways [25].

2.1.2.3 Control Communications:

This communication process is to control and monitor the communications of entire project to make sure the process is followed. It is to make sure the information flows between stakeholders, at any time they need them [25].

Project managers should have these communication skills in order to manage their projects effectively and update project information with others. For example, if project managers cannot effectively share their ideas with teams, provide accurate information at the right time to the right people and provide good documentation, they will not be successful. Another example: There were communication problems in then Harvard Business School's "Providian Trust" case that occurred because the project managers in all departments were lacking in communication skills and they did not have the ability to share their ideas with others. This affected the entire project. They must have the ability to write effective e-mails, prepare projects documentations, reports, updates, plans, agendas, and specifications [46]. Therefore, good communicators will have good writing skills because communications are not only talking face to face but also in writing. They should be professional in their writing skills to get the attention of others.

Also, they should attempt to get to know the stakeholders at a personal level, not only in work, but understand the interest, hobbies and families because this helps them to build strong relationships. They should be more social in the workplace because this is one way that helps project managers to get information more easily and share that information with others. They should listen to their needs, celebrate with them, build trust among them and ask them how the project is going and what their feelings are about it. Project Managers need to understand that the lack of communication means that the project may have trouble in the future. It is very important for project managers to know how to deal with a diversity of people and cultures at the same time and what kinds of communication should be used, verbal or nonverbal because understanding others behaviors will create less conflict and fewer problems.

There are three levels of communication such as communication with top project managers, communication with team members and across communication with stakeholders and peers. Project Managers need to be able to communicate up, across and down in an organization. They need to understand both the formal hierarchy and the informal hierarchy. In fact, the informal hierarchy can often be the most effective way as these individuals can bring others along. The way that project managers communicate with top managers should be different from the way that they communicate with their team members. Good communicators will persuade others with their ideas in order to bring value to their projects.

2.1.3. Team Building Skill

Project managers must always have positive attitudes, keeping their team members active and enthusiastic. They can build strong teams and inspire them to be part of the project's decisions making process. They should have the ability and knowledge to share the project's vision in order to achieve the project's objectives. Project teams should be aware of project documents and project flow information into project scope, plans, features, schedule, etc. in order to succeed.

[15] identifies five stages of a team development model:

- Forming
- Storming
- Norming
- Performing
- Adjourning

The stages are very important to develop teams and help project managers get information about projects more quickly. These stages provide a basis for teams to understand their own development. Also, they help project managers lead their teams, develop them and understand their needs. In addition, good project managers have the abilities to engage and motivate their teams to get a high level of performance. They always provide their teams with clear pictures of the expected results. Therefore, a strong team works together for a purpose which is reaching good project conclusions.

2.1.3.1. Developing Teams within Projects

Project managers and executive leadership should always strive to improve their team members' skills and competencies in order to improve the projects' performances. The main reason for developing teams is to enhance the team's abilities and skills in the work environment to complete the project. Project managers should develop skills to

maintain and build project teams to meet the desired results. Teamwork is one of the most important factors to bring success to the project [25]. They must know how to delegate assignments to team members for results.

Therefore, project team management will contribute to the success of an organization. These organizations require project managers and strong teams because project managers and their teams should deliver positive results to their organizations by achieving the right goals [22]. It does not mean good project managers and their teams can complete the project within the cost and schedule; this might be done with poor quality and in the wrong way. Project leaders have the ability to resolve conflicts within teams through good communication with them. By doing this, they will ensure that their teams are growing and adding value. This can be through the removal of barriers among them to balance their needs by surveying and getting the right solutions.

2.1.3.2. Problems Solving Skills and Making Decisions

Project managers should have the ability to prepare plans, implement processes and guide their team members to solve problems that arise during a project. They need to analyze the situation and identify the potential problems before making any decision related to these problems. This will help them establish plans for solving them. In this situation, making decisions are very critical and important to minimize risks. According to the author [46], project managers should focus on details and specific information in order to get the big picture of the problems. Also, they should develop at least two alternative solutions. This will help project managers to have multiple choices for solving problems. Project managers need to take action to prevent the issues from escalating out of control. Project managers should be creative and resourceful in their approach to problem solving. They can identify problems within their teams that can help them to get the right solutions and effective plans [22].

Then project technical lead is individual responsible for the technical aspects of the project. They are typical the Subject Matter Expert (SME). It is very important for project managers to be aware of the technical leads responsibilities in order to partner with them to solve technical problems. This awareness will help project managers to direct technical issues to the technical leads for resolution. The technical leads will develop technical solutions with the project manager to address the technical problems. Also, they can analyze the technical risks in order to minimize them and keep the project moving [46].

2.1.4. Challenges and Risks within Projects

The current business environment is more complex and challenging than ever. This creates the need for project managers to be highly skilled. Managing a project requires unique skills in methodology and strategy to deal with challenges. Therefore, project managers need to learn how to handle potential challenges within their projects. They should learn from past project challenges and set up plans to face these challenges. Also, they have to work with their teams to identify the potential challenges in order to limit them. It is very important to take risks and challenges into consideration because this way they can improve their projects and their personal ability to solve these risks in the future. This will be explained in more detail in chapter five.

2.1.5. Organizational Skills

Many people have good organizational skills which help them to become more productive in their careers. Some people have many skills but they do not possess good organizational skills. These people need to develop their organizational skills in order to prevent costly mistakes and make better projects. When project managers are well organized, they will be able to meet the projects' deadlines if they have good organizational skills. Project schedules and time management are very important for project managers. Project managers should hold meetings with team member to develop organizational skills in order to meet deadlines.

2.1.6. Negotiation Skills

Project Managers may encounter various forms of conflict on their projects and must be prepared to handle them. They require strong negotiation skills. In every meeting project managers negotiate with a diverse group of people; this requires a good attitude and persuades them with their ideas. This situation also requires project managers to be good negotiators to persuade others to solve sources of conflicts. The author [38] shows a seven step guide to successful negotiation (see Table 2.5). Project managers should focus on these steps to avoid any trouble during the project's lifecycle. In addition, the author [38] said good project managers should have three important qualities, such as credibility, flexibility, and honesty. They should also have three more, important skills which are judgment, listening, and communication in order to be successful in negotiations.

Table 2.5: Negotiation Skills

Guidelines	Strategies
<ol style="list-style-type: none"> 1- Be prepare 2- Be sensitive to different perceptions. 3- Use creativity and imagination. 4- Help others to agree with your proposal. 	<ol style="list-style-type: none"> 1- Know everything possible about the project. 2- Separate people from the problem. 3- Understand that each person's view of the project may be different.
<ol style="list-style-type: none"> 5-Value any deadlines you agree to. 6-Take notes and follow up with a record outlining the agreements 7-Prepare for no agreement, but leave with an intact relationship. 	<ol style="list-style-type: none"> 4-Create options and be flexible. 5-Use standards, published procedures, and corporate goals. 6-Always provide a written record of the agreements each party made. 7- Be prepared in case no agreement is possible.

Source: [38]

2.2. Project Costs and Plan Schedules

Project managers require skills and knowledge that enable them to estimate accurate budgets and plans. This will help project managers successfully deliver their projects within budget. Project managers should estimate accurate costs to complete their projects successful. Also, they should estimate all costs of the project, such as costs of resources, cost of control and manage project. The processes of the project costs are [25]:

- Plan Costs: In this process, project management will establish all activities, documentation, procedures, and policies for making plans, controlling and managing project costs. The benefit of this planning is to provide direction and guidance on how to manage project costs throughout the project life cycle.

- Estimate Costs: Estimate all resources needed to complete projects. The benefit of this point is to know the costs needed to finish each project.
- Determine a Budget: Determine the estimated costs of work packages and individual activities to establish a cost baseline. The benefit of this step is to control and monitor the baseline of cost and project performance.
- Control Costs: Monitoring and controlling the update of the projects' costs and managing the baseline cost of changes. The benefit of this step is to recognize the differences between plans to minimize risks and make corrective actions.

2.2.1. Planning Schedules

Schedules planning establish all activities and project criteria to control, monitor and develop reasonable schedules.

Project schedules are defined based on project requirements. Planning schedules can contribute the following:

- Schedule of the projects models, development and maintenance
- Accuracy levels
- Measurement of schedules
- Procedures for organizing schedules
- Control thresholds
- Performance rules
- Report formats
- Descriptions of processes

2.2.2. Forecasting and Developing Schedules

Forecasting a project is the process to determine the size and duration of project activities. Scheduling a project is adds specific start and end dates, relationships, and resources. By scheduling, project managers can ensure that the work they are performing supports a project versus ongoing activities. The question is how can project managers schedule? They should follow these steps:

- Identify “what” needs to be done (Using WBS)
- Identify “how much” (the project size): using size estimation techniques
- Identify the dependency between tasks: Dependency graph, network diagram

- Estimate total duration of the work to be done: The actual schedule [8]. All project managers should know how to develop project schedules. Developing a schedule is necessary in order to create the schedule model for projects; this can be done through requirements resources, analysis activities, constraints and schedule durations. The benefit of this model is to enter all the projects' activities, plans, durations, budgets and available resources into tools of project scheduling. Controlling a schedule is the approach of monitoring and managing project status and changing baselines of schedules to update progress of each project in order to achieve the project's plans. It is a very important process to minimize risks and control potential problems through identifying deviations from projects plans [25]. Thus, project managers should have skills that enable them to estimate accurate plans, costs, and schedules in order to achieve the organizations' goals.

2.3. Other factors leading to the success of projects

According to the author [26], there are four important steps leading to success of projects within organizations, such as skillful people, good planning, attention to risk management, and project closure. These factors contribute significant needs to the project outcome and help the organizations achieve the projects' goals. All these factors together are making each project successful in efficient ways. Project managers should make sure that everything is set in place to run each project smoothly and without trouble. However, they cannot guarantee that the project's outcome will be successful. The project managers, stakeholders and team members should pay attention to these factors that will help them to lead the projects to the right conclusion. The following factors are to increase the value of the projects in the future.

2.3.1 Skillful people

Team members and Sponsors are important keys in the project's success. Sponsors are considered one of the most effective influences on project decisions. Without sponsor support, the project would face serious trouble and have difficulty reaching the projects' end goal [26]. For example, if these people are skillful the results will be that the project succeeds and that there are fewer disagreements with project managers. Therefore, the first thing to contribute success to the projects is to have talented team members and project managers. Project managers should have smart thinking in order to engage stakeholders in the project. Effective project managers have the ability to use their skills and knowledge

to solve problems quickly. Stakeholders, team members and project managers have a commitment to the organizations to achieve the projects' objectives.

2.3.2 Effective Planning

At the beginning of any project, the project manager should start with good planning in order to achieve project success. Planning is established to help the project managers and their team members to meet targets and to be organized during the project life cycle. Planning keeps the project managers focused and on track and aware of the progress of the project. There are many advantages to effective planning, such as, creating realistic and reliable schedules for the projects. It also provides accurate estimates of costs for projects, delivering the projects easily, accurate plan details for all resources and providing visibility of expectations. Before starting, they should look at previously established plans and take advantage of them in order to establish an accurate finish date for future projects. This will help project managers to reduce redundancies, project estimate costs in order to create accurate schedules. Therefore, the best way to succeed in a project is to have good planning [26].

2.3.3 Attention to Risk Management

Project managers can limit risks by setting plans to reduce potential risks that could happen within a project. Also, they should get accurate information to evaluate risks before making any decisions because this will help them limit risks. They should carefully manage the risks because if they do not have action plans for them they could face problems during the life of the projects [26]. Also, they must make sure that the stakeholders and team workers are aware of these risks and know how they can limit them. This will help project managers quickly resolve problems with good plans which are already put in place. Also, this method helps team members to gain more confidence in facing risks and to help others to feel more confident within the progression of projects. Poor risk management might hinder the project or delay it. This could increase the budgets and affect the schedule of projects. For example, there were many risks happening in the Harvard Business School's Providian Trust Case [6] that affected the project and made it difficult, such as the project managers and their team members did not have enough training to enable them to deal with high levels of technology. In addition, in the Harvard Business School's BAE Automated Systems Case [18], the risk management control had a major impact on the schedule and cost of the project. Therefore, great project managers know how to

manage risks and come up with a schedule and plan for handling risks. They know how to organize and analyze risks within their projects. For more detail see chapter five.

2.3.4 Project Closure

Project closure results in the completion of all project activities. Once project managers and team members release the project's results, they can transition the organization to work on another project. Closure of project inputs, outputs, tools and techniques are explained in more detail in Figure 2.9. The project managers should agree with clients that factors of project success have been reached. They must confirm and sign off the project testing, delivery and release. All things, such as valuable information should be documented and referenced for future use [26].

Chapter Three

The Agile Method

Introduction

Project managers understand that projects fail for many reasons, such as the difficulty to change the requirements during the lifecycle of a project and problems with project design, etc. These situations require that project managers seek alternate methods that can help them to become more flexible in their workplace and to control changes within projects in order to satisfy their customers. This can be done through using Agile method in their projects. Agile started as a software development model which became beneficial in many industry fields by improving the project teams' abilities and satisfying its customers [7]. Some organizations introduced and switched their traditional methods to the Agile method without taking into consideration cultural shifts in the workplace; these organizations could be faced with many problems and conflicts due to poor planning. Project managers need to coach to teach employees understand, practice and get more experience with using Agile, before their organization starts use it. Agile is an important approach that can help organizations to move forward faster than others who use a traditional approach. John P. Kotter and James L. Heskett, (as cited by [7]) showed the results in their exam of more than 200 companies who are using the Agile approach. The results were (p. 3):

- Profits grew faster, more than four times others
- Job creation rates are higher by seven times
- Stock revenue grew faster by 12 times
- Performance of profit is higher by 750 times than others

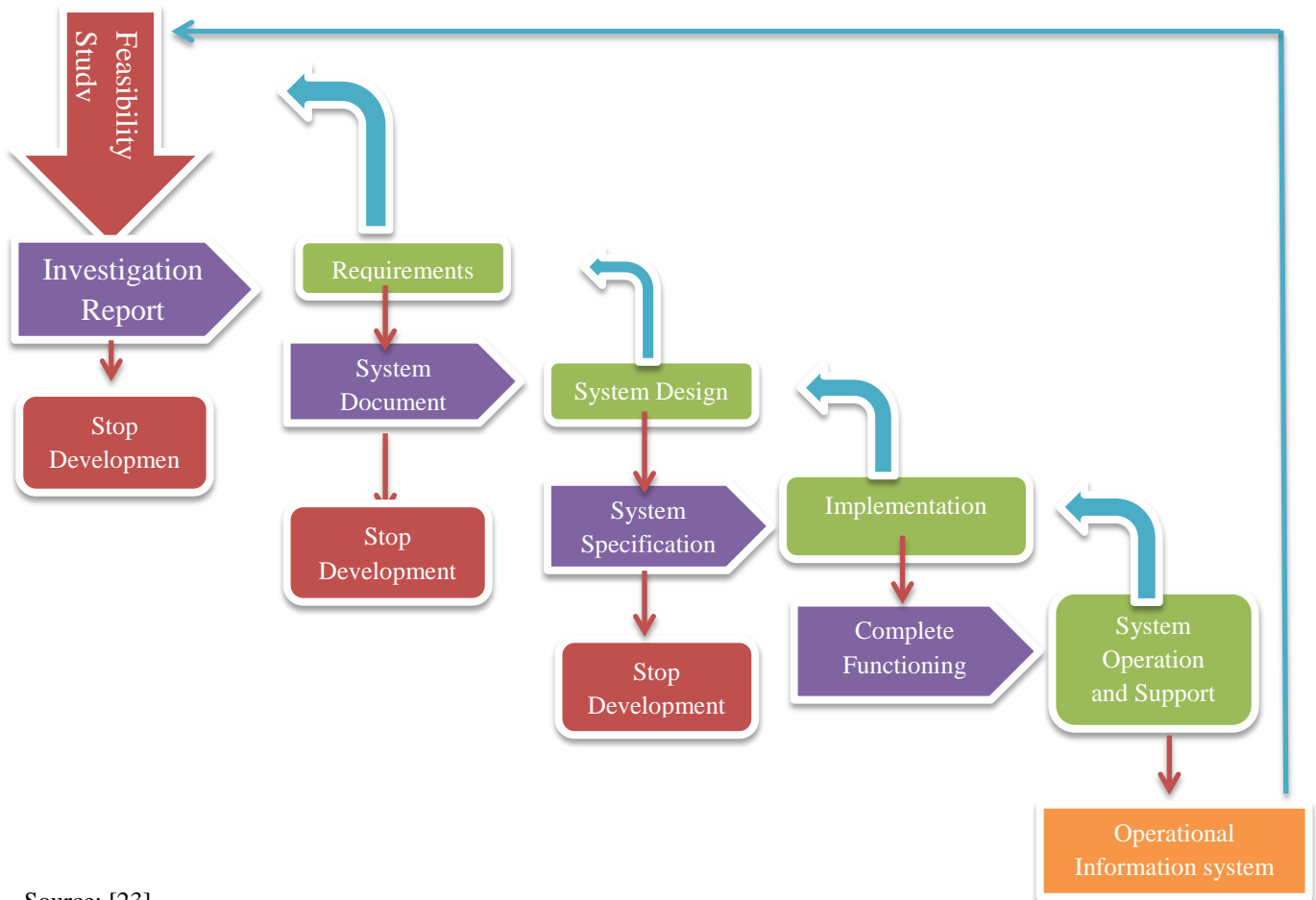
In this chapter the Agile approach will be discussed and what the benefits are of using this method within projects. Also, it will be explained how to convert traditional methods to the Agile method with a diversity of cultures.

3.1 Agile Method Vs Traditional Method

According to the author [7] "Agile is a technique to bring high quality products, services, and software to market more quickly, and get business value or revenue from them faster, while protecting and motivating the people on the team" (p. 8). This means that through using the Agile method, organizations can respond to competition, in their market, more rapidly in order to improve the value of their products quickly and to provide good quality products to their customers. Also, it means that the project team can rapidly change and adapt their projects when they find it useful and

necessary to change direction. It helps project managers to become more flexible in their approaches within projects. The Agile model is very different from the traditional Waterfall model (See Figure 3.4 and 3.5). Figure 3.4 shows that project teams that use the Waterfall model cannot move to the next step of development until the previous phase is finished.

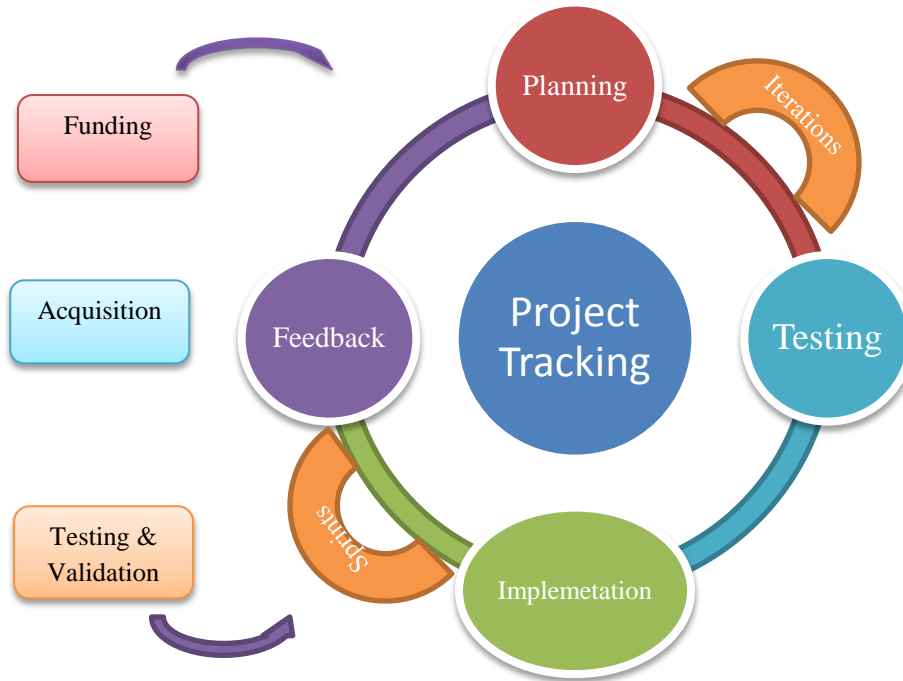
Figure 3.4: The Waterfall Model



Source: [23]

However, in the Agile model, project teams have the abilities to continually develop the project's requirements in each phase. Figure 3.5 illustrates that the Agile method is focusing on development iterations and embrace the change.

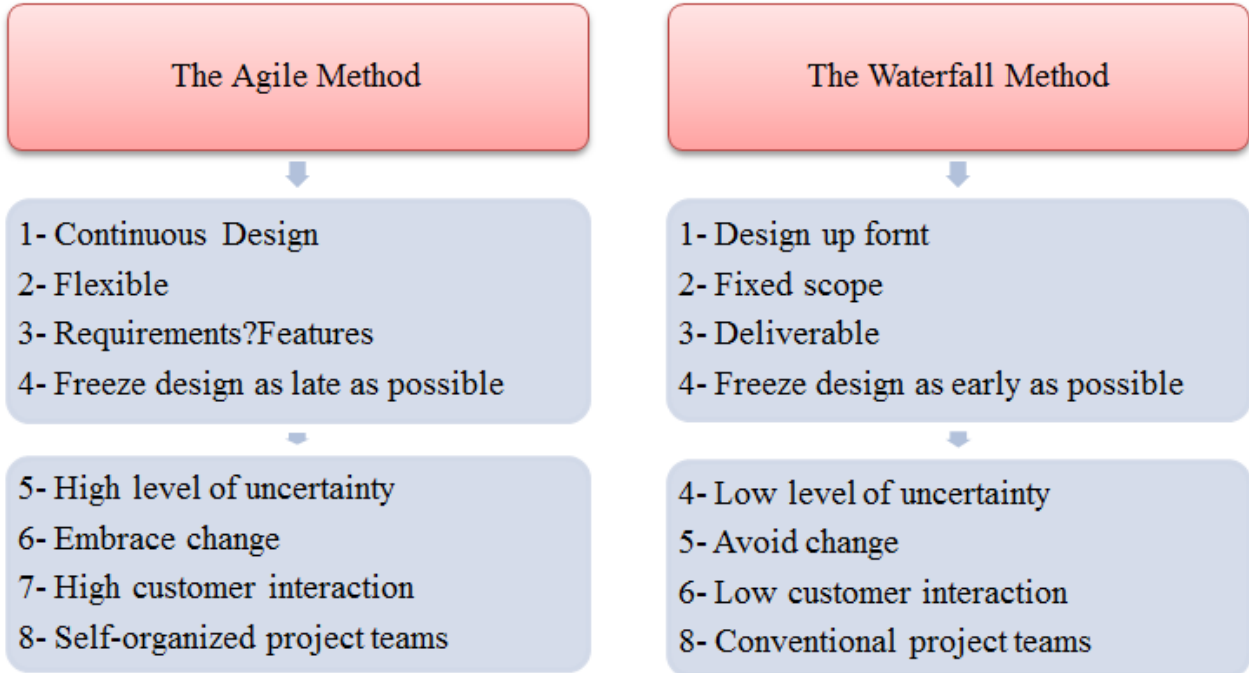
Figure 3.5: The Agile Model



Source: [23]

Agile software development attempts work more easily and require less documentation than Waterfall method in its approach to support the project. Also, it focuses on meeting customers' satisfactions in an efficient manner. There are many differences between Agile method and traditional methods, such as in the Waterfall method, where the plan of a project is defined at the beginning of a project. Also, with the waterfall method, projects are considered predictably prone to failure. On the other hand, with the Agile method, the plan of the project is in continuous design throughout the project process and therefore are more likely to succeed. It focuses on cooperation between customers and the project team. Agile method helps customers to become part of the projects' decisions; this is considered a good method to meet customers' satisfactions and brings high value of products or services to the organization. Table 3.6 expresses the different aspects between the Agile method and the Traditional method (Waterfall method). For example, this table shows that the Agile method creates interaction with customers directly. Conversely, it shows that the Traditional method avoids interaction with customers. Therefore, the customers' satisfaction is one of the most significant principles in the Agile model [15]

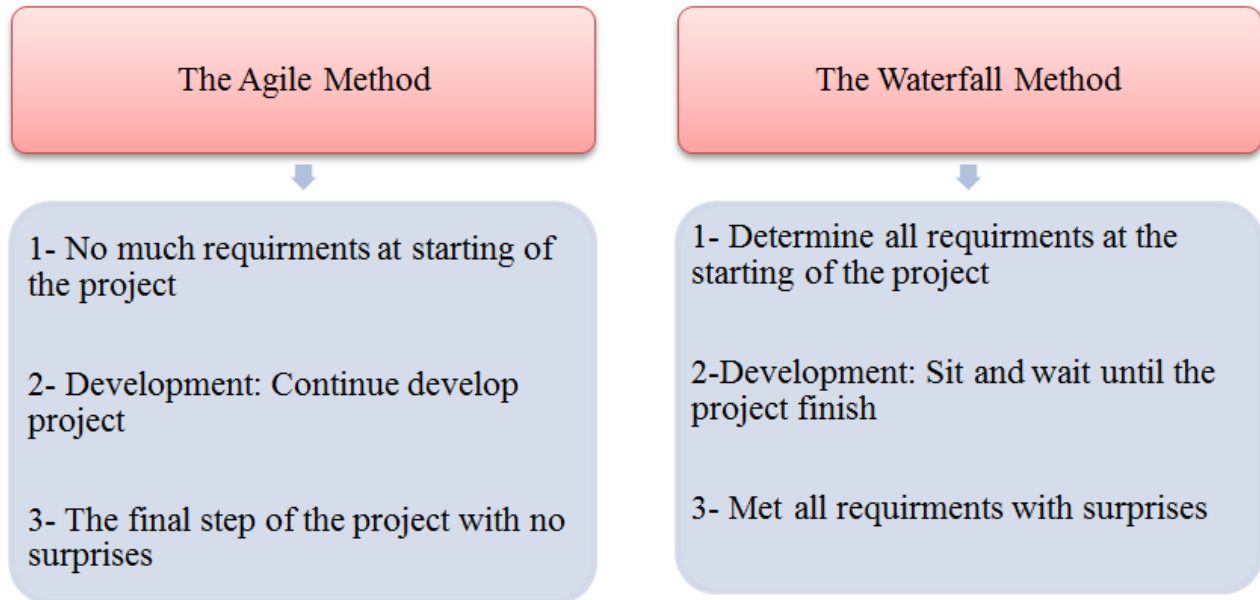
Table 3.6: The Agile Method vs. Traditional Method



Source: [15]

In addition, although there are some similarities in the business sector between the Agile method and the Waterfall method, there are many differences, such as in the Waterfall method, the requirements, schedules and costs are set up before the start of each project. Conversely, in the Agile method, the requirements are being collected during the process of a project and they will most likely change during the project's lifecycle [13] (See Table 3.7).

Table 3.7: The Agile Method vs. The Waterfall Method in the Business Sector



Source: [13]

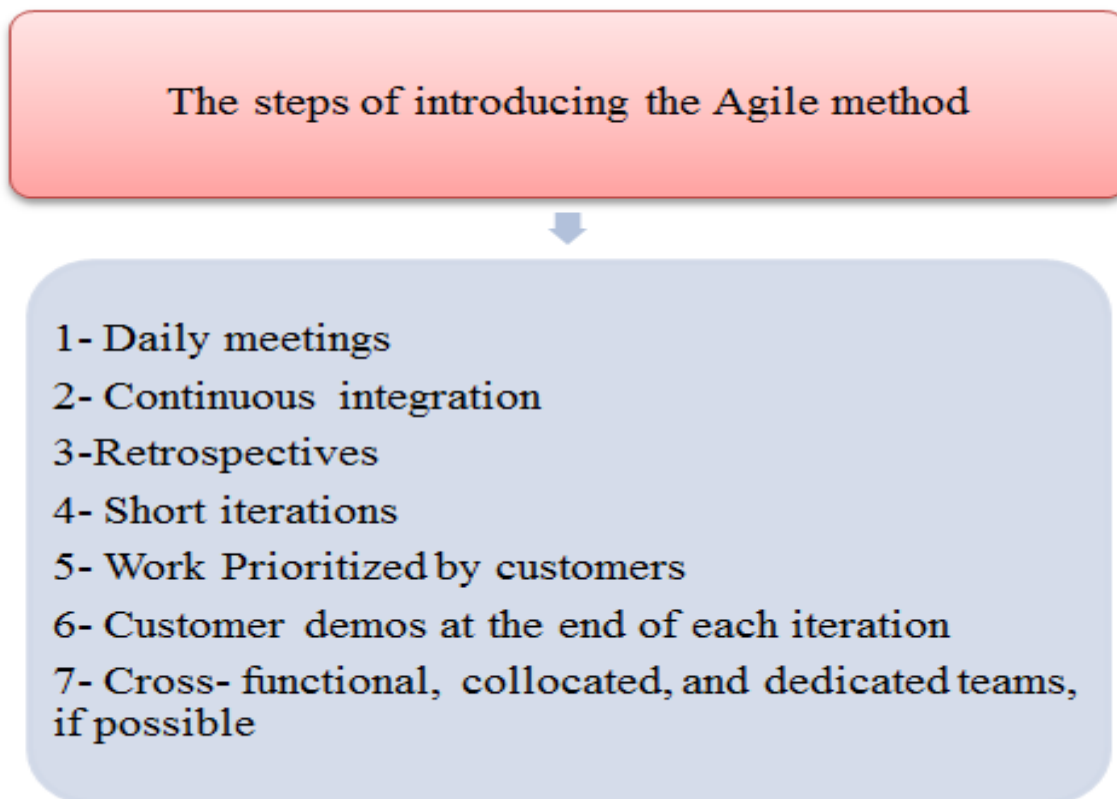
3.2 Should an organization change their projects methods to the Agile method?

The goal of using the Agile method is to deliver good quality products, optimize the project costs and promote cooperation through, iterative and incremental processes [32]. Many organizations need to update their methods in order to face the competition in the market and develop their products. These organizations should consider which methods use to develop their projects in order to ensure which methods are best to implement their projects. Many organizations change and update their project methods to the Agile method without taking into consideration culture shift. These organizations will face many problems with project teams and create a conflict among employees because many people do not feel comfortable with change. Also, this situation may cause project failure. Organizations should change their methods step by step to the Agile method in order to limit the culture resistance within their projects.

Many organizations choose the Waterfall method for their projects because this method works well for them, yet they may have diverse cultures within their project teams. Therefore, these organizations may face risks if they change from one method to another, because some project teams don't see the value of the change. On the other hand, some teams are willing to develop and learn new methods that will help them in the future. These teams will change their traditional approach to the Agile approach in their projects in order to continue development of their products (Barbee

Davis, 2013). All organizations that are willing to update and change their traditional method to the Agile method should follow the steps in table 3.8 in order to limit culture resistance. For example, they should start by setting up daily meetings with teams to address conflicts among them and remove any roadblocks. This will help teams to focus on developing their projects. The next step of introducing the Agile method is to continue integration that will build incrementally. The project manager will keep the team on track to ensure that the project continues moving forward during this incremental process. They have to make sure what they have done and what they have changed is working before beginning the next iteration. Therefore, these steps are very important to the introduction of the Agile method.

Table 3.8: The Steps of introducing the Agile Method



Source: [7]

3.3 The Agile Method Factors

There are three important factors that help to describe the concept of the Agile method that demonstrate the value of the Agile method.

3.3.1 *Incremental and Iterative*

Project teams cannot estimate the final product design at the beginning of the project because the details of the final product are unknown and the product design continues developing over time through incremental iterations [7]

3.3.1.1 *Iterative* is a repetitive process with periods of typically one to six sprints. The work period of 1 to 2 weeks is called iterative. The idea of these iterations is to improve the workability of the team as the project is being formed. In this method, the project team, stakeholders and customers can review the project and reprioritize the process if it is necessary. This will ensure that alignment with all requirements will be on going [7].

3.3.1.2 *Incremental* means that project teams will work on small tasks in a sequence. In the following increments, they will work on new tasks and so on. At the end of every increment, project teams will have a small part of the finished service or product, that they can derive early feedback by showing it to their customers. In the next increment, they start another part of their vision [7].

3.3.1.3 *A dedicated group* means that the project's teams are focusing on one project rather than working on many projects at the same time. In contrast, traditional methods allow project teams to work on many projects at the same time [7].

3.3.2 *Embracing Project Change*

The Agile method allows project managers to make changes during the projects' lifecycle. Project teams should update processes and make changes within their projects when it is necessary to develop products and achieve good quality. The Agile method allows customers to participate in the process of the projects. Sometimes these customers request some changes to the products; in this case, project teams should change their processes in order to meet the customers' requirements. Therefore, the organizations will have customer satisfaction and a competitive advantage. Also, the Agile method helps project teams to change plans as needed. This will encourage the project team to

continuously develop their plans through the process as necessary. However, the Waterfall method avoids and prevents change within the projects. This might create problems with customers and make the conflicts with others [7].

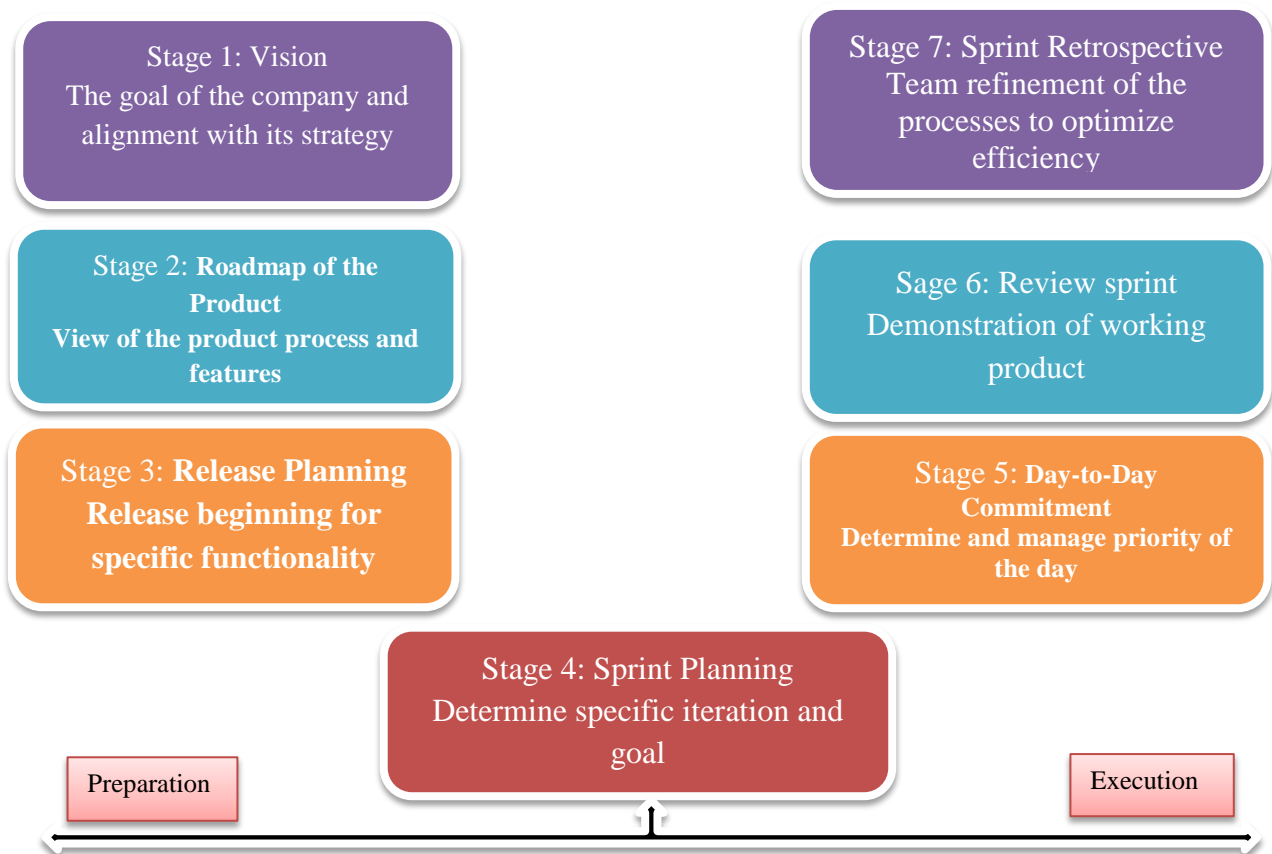
3.3.3 Working with Customers

Many products have been developed with the customers' feedback and requirements. One of the most important methods to utilize with the customers is the process of the project at the beginning and throughout the project lifecycle, because they will have the ability to give their input to develop the products' requirements. This is a way the project teams can continuously develop the product before it is done. In the Agile method, the project team shows the customers the process of the project and what they have done rather than wait till the project is finished. The Agile method allows the customers to visit all project team meetings and directly cooperate with them. The customers work with the project team to create a method that will deliver the project's goal. On the other hand, in the traditional method, the project teams sign up for specific tasks that are prepared by their project manager without interaction with their customers [7].

3.4 The Value of the Agile Roadmap

The value of the Agile Roadmap is to provide the big picture of a project. The value of the Agile Roadmap has seven stages that will be discussed in figure 3.6. The Agile Roadmap helps the organization to be more flexible in its implementation of the projects. This is a very important approach in preparation for the project in order to successfully execute the project. These stages are: vision, the roadmap, release planning, sprint planning, day-to-day scrum, review sprint and retrospective sprint [21].

Figure 3.6: The Agile Roadmap to Value



Source: [21]

3.4.1 Vision:

The first step of the Roadmap method is to identify and create a clear vision for the product. The project vision is for long term during the project until the project ends. It helps the project teams and stakeholders to be aware of the project goals. This part of the process will help to determine what the organization's product will be and how it matches with the company's strategy. There are six forms that describe the organization's vision, such as the following [30]:

- For (target customers)
- Who (opportunity)
- The (the name of the product) is (a category of the product)
- That (The reason to buy the product, The key benefit)
- Differences (the competition's alternative)
- Product (the definition of the product)

3.4.2 Roadmap of the Product

After project teams create a product vision, they will then define a product roadmap. The vision of the product will help project teams to create ideas in order to create a good roadmap of the product. The owner of the product works with the product team to update the product roadmap as necessary in the Agile method. The roadmap of the product is designed to review, prioritize, categorize the requirements and define a schedule for release of the product. There are four steps for creating a roadmap [30]:

- Identifying the requirements to implement the Agile method
- Arranging features of the product into themes
- Putting into order and defining features of the product
- Defining the Agile timeframes

3.4.3 Release Planning

Plan release is to define increments of product that is released to customer and to identify the schedule for release of the product. Each release has 3 to 5 sprints. There are three characteristics that describe the release [30]:

- Release is determined by plan feature, theme, and date.
- Team members have a commitment to work at the same cadence during iterations
- All teams have fixed dates to release their products

3.4.4 Sprint Plan: Every sprint meeting splits into two parts of planning. The first part of the meeting is designed to review the product requirements and what the project team should focus on for the next sprint. In this meeting project teams will also ask for more information about the product in order to clarify their questions and choose the objectives. In the second part of the meeting, the team will work to build the sprint. Also, the team will analyze the project's tasks and estimate the timeframe. This is part of the iterations process [30].

3.4.5 Day-to-Day Commitment: Day-to-Day Scrum is a very important portion of a sprint. A good Day-to-Day scrum gives the team energy to keep focus on the target. Every member of the team works on three important ideas: what he or she has done yesterday, whether he or she is stopped and what he or she shall work on. The Scrum helps teams to make sure that all releases are on track [30].

3.4.6 Review sprint: In this step, the project team reviews the sprint and demonstrates the product that it created through each sprint to the stakeholders [30].

3.4.7 Sprint Retrospective: In this step, the project team will discuss the palms for each sprint in order to improve the next step of sprint. This will be done at the finish of each sprint [30].

3.5 The Main Aspects of the Agile method: “Customer satisfaction”, “Project Done” and “Project Feature”

The main aspects of the Agile method are to provide the information about the customers and how satisfy them, what is the project’s feature and when it done. This is a very important method to focus on three keys of the projects criteria. Project managers and their teams should focus on these features in order to achieve projects successes [40]:

3.5.1 Define Project Customers

In the Agile method, the customers play an important role in making decisions related to the projects. Also, they direct contact with project teams to reprioritize the project requirements in order to implement the project as they requests. They involve in projects activities to discuss with project team about their feedback to achieve project’s goals which is customers’ satisfaction. Therefore, the first aspect of the Agile method is to define the customers. Project manager should coordinate these requirements in order to maintain continue developing the project [40].

3.5.2 Define Project Done

Done is the definition of the final step of requirements of the projects. Project team will determine the project “done” when the project feature and criteria are completed. The concept done in the Agile method is a measurable of the project achievement that can define at the testing of the project and acceptance final test [40].

3.5.3 Define Project Feature

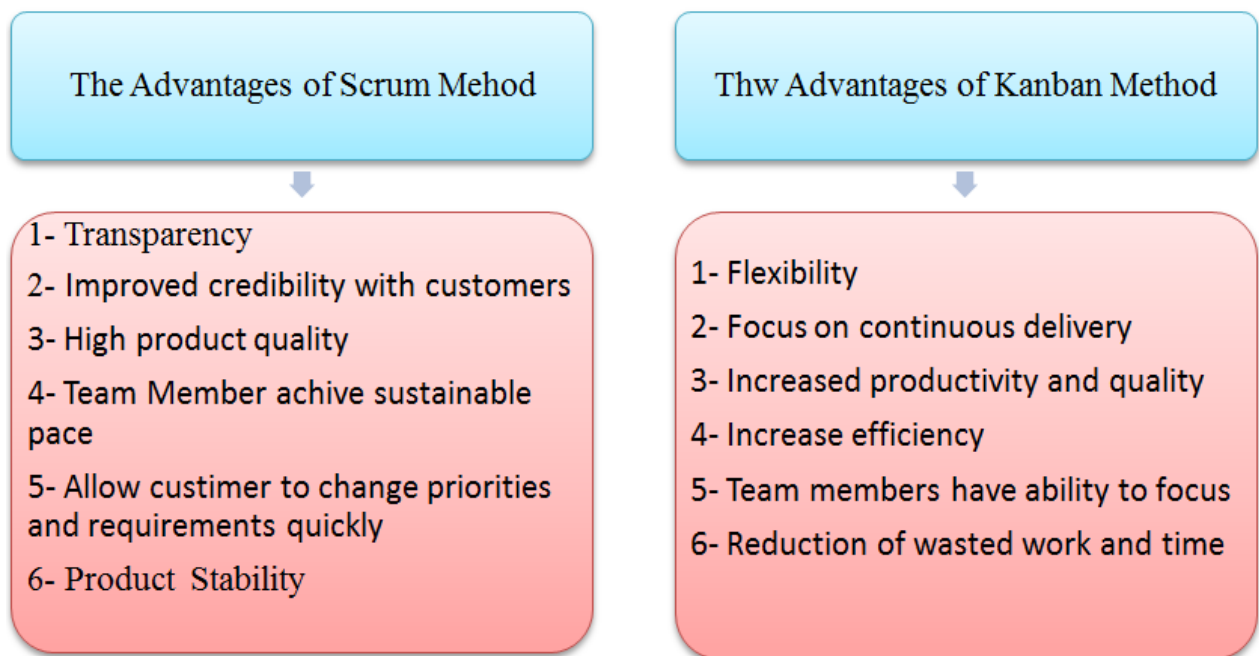
Project team define product feature from their customers’ viewpoint. The Agile project focus on deliver features to their customers. There are three important functions that define a feature such as:

- The project’s customers have own description of the feature from their behavior rather than execution detail.
- Provide customers satisfaction.
- It provides value to the customers with all their expectations [40].

3.6 Kanban vs. Scrum

According to the author [39] “Kanban is a method for managing the creation of products with an emphasis on continual delivery while not overburdening the development team.” Kanban is started 1940s by Japanese Toyota company as framework for “card” or “visual signal” to implement and optimize work in processes in order to maximize value and reduce waste. Kanban helps project teams to be more flexible in their planning, focus on projects, getting faster output and transparency in their work; this can be during development cycle [29]. Kanban helps teams use card notes of their visual information in order to make “picture” of their work. This will help teams to see their work flow processes, communicate with others and gives context for their work [1]. This technique means that Kanban is set to help project teams to work and manage their projects more efficiency because it focuses on the work on progresses. It is a visual of project management toward of the future. Scrum is the Agile tool set to control complexity of projects [39]. Kanban and Scrum are emphasized efficiency and productivity for the organizations. The advantages of Kanban and Scrum in delivery good quality refers in table below.

Table 3.9: Advantages of Scrum and Kanban



Source: [31]

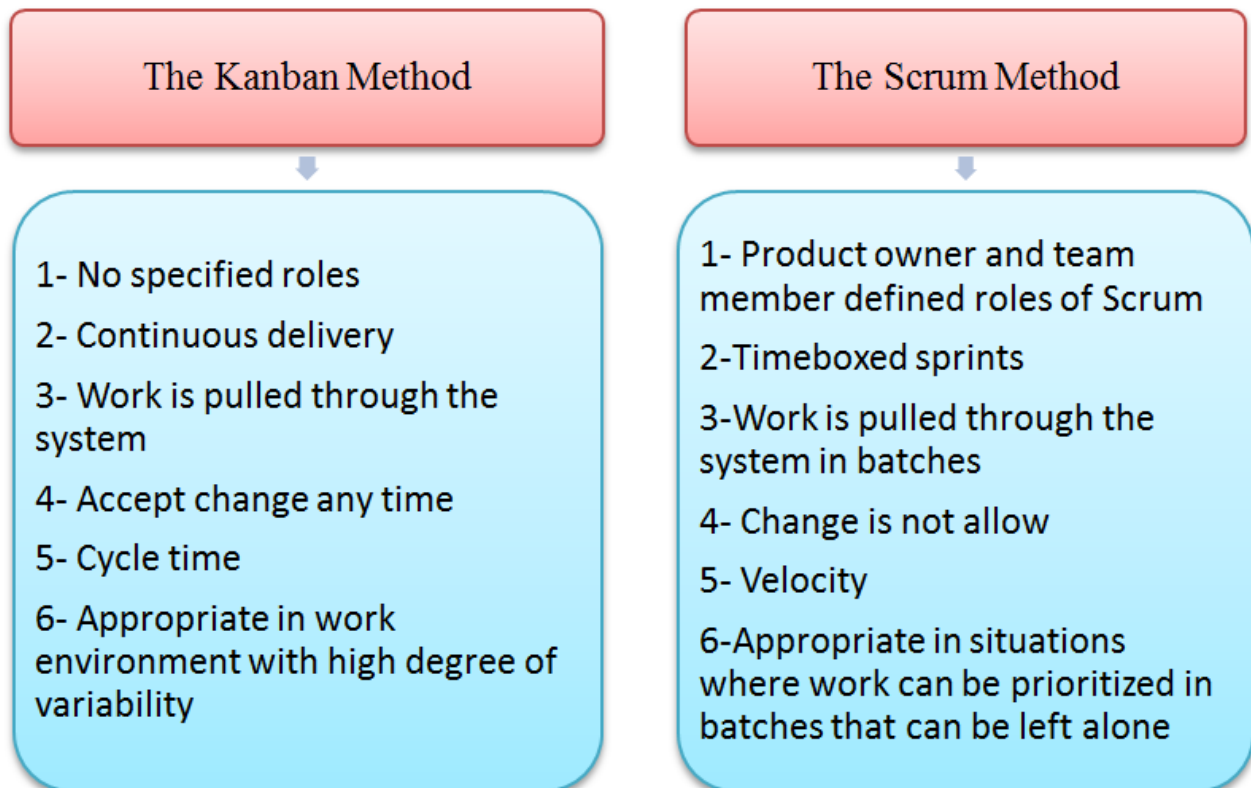
There is an important question which is how to choose Kanban over Scrum or conversely? It depends on the organization situation. For example, self-organization and continuous improvement of culture require Kanban over Scrum because Kanban works good to continuous improvement of culture. Also, if culture demand in the organization is required to high level of degree of ceremony, it should choose Scrum over Kanban because Scrum works well with culture that required many documentations [17].

The core principles of Kanban are listed below [1]:

- Visualize work: Cooperation and communication will be increased by using Kanban system; this throughout creating the work visual model.
- Limit work in process: The work in processes can be limited and reduced by Kanban system through re-prioritize unfinished work.
- Focus on flow: Kanban can improve the work flow, analyze work flow and collect metrics.
- Continuously improve: Kanban helps to measure project teams efficiency through leading time, quality, track flow, etc. this can develop its project teams effectiveness

Although the Scrum and Kanban are the Agile tools set to help project teams managing projects, they have some differences listed in the table 3.10.

Table 3.10: Kanban vs. Scrum



Source: [39]

Chapter Four

Project Portfolio Management

Introduction

The author [25] defines a portfolio as “projects, programs, sub-portfolios, and operations managed as a group to achieve strategic objectives.” Also, it defined project portfolio management (PPM) as “the centralized management of one or more portfolios to achieve strategic objectives” (p. 9). Organizations use project portfolio management to balance their investments in projects with their strategic objective. Organizations utilizes portfolio management to select the right projects, programs, provide resources as needed, and prioritize them in order to achieve benefits for the organization. This means that the organizations use a portfolio management to ensure that the investment of a project/program meets an organization desired goals. Also, the organizations use project portfolio management to face the complexity of the economic and competitive advantage today [25].

In this chapter, the concept of project portfolio management and why it is important for an organization will be discussed. Also, the following questions will be answered in a brief description.

- What is a portfolio lifecycle?
- What are the differences between portfolio, project and program management?
- The important Stages to Build a Profitable Portfolio Management

4.1 Project Portfolio Management?

Project portfolio management (PPM) is the process and methodology to identify, select and prioritize projects and programs in order to align them with strategic business objectives. In short, PPM is “doing the right things right.” Work efforts, programs, and projects are referred to “Things.” The phrase: “Doing the right things right” means that selecting and prioritizing the right projects and programs is important to deliver good quality in order to achieve the organization’s goals [27]. Therefore, portfolio project management is very important in an organization because it supports its strategic objectives. Also, it is critical to prioritizing and organizing programs and projects in order to make sure that there is suitable financial support for the organizations’ objectives. Portfolio management, project manangement and program management are working together toward one target which is to achieve an organization’s goals. Therefore, it is very important to know the differences and similarities among portfolio, project and program management in order to understand these disciplines. There are many differences between portfolio, project and program management. These

differences distinguish them to show how they are linked to the OPM (Organizational Project Management). OPM is an organization's guide to utilizing and executing portfolio, program, and project management in order to achieve its strategies. Also, it helps an organization to provide good performance and take advantage of the competition in order to achieve good results [25].

4.2 PPM Objectives

The main objectives of PPM is to bring benefits to the organization by prioritizing and selection the right programs, projects and align them with its strategies in order to achieve good value and revenue to the organization. Also, it defines the organization standards and links to the strategic objectives. There are four core objectives of PPM [8]:

- Creating value for the organization throughout translating its strategic objectives into tangible standards in order to choose the right projects/ programs
- Getting the competitive advantage by prioritizing and selecting the right projects
- “Perform regular project reviews”
“Unfound bleeder projects and those no longer strategically aligned”.

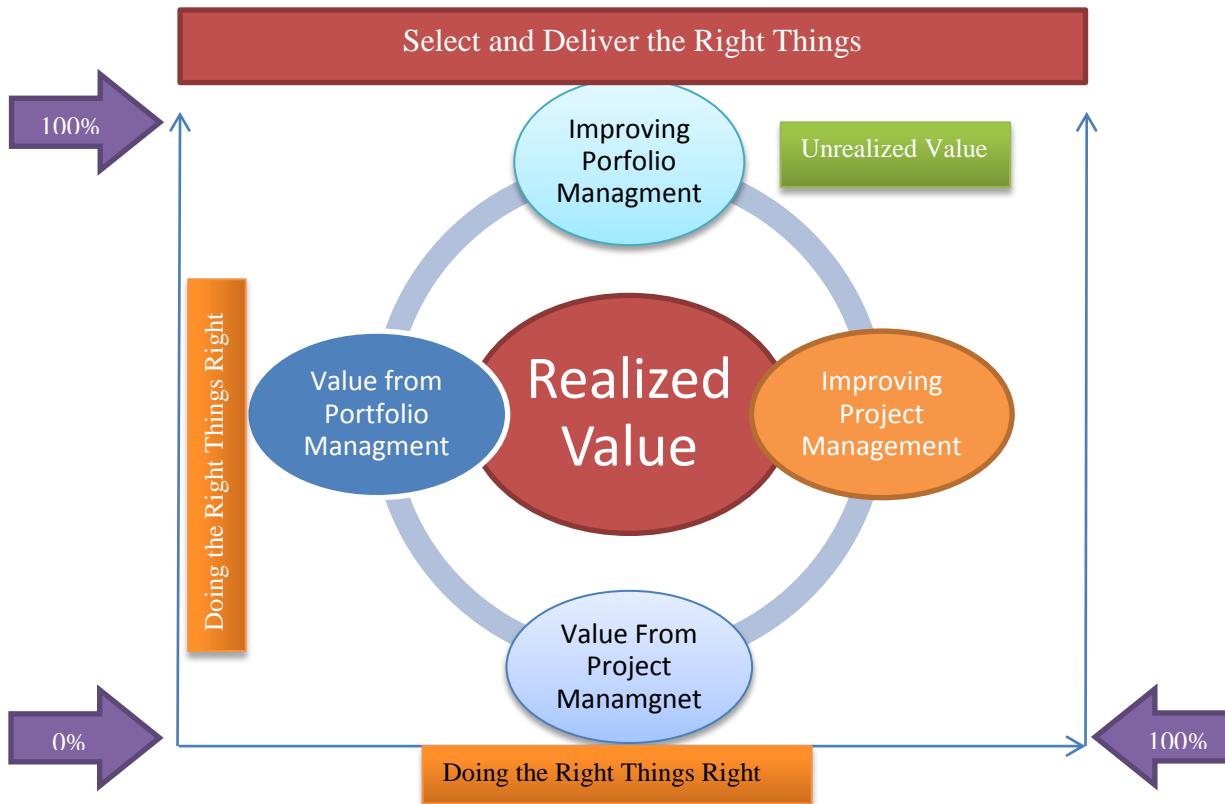
Therefore, one of the goals of PPM is to use the portfolio's approach in order to define standards, which are related to the organization's strategies and goals. Economic goals, such as budgeted costs, profitability and profit growth, should not be the only reasons for choosing and prioritizing projects. Other objectives should be taken into consideration. For example, meeting the customers demand, or regulatory is one of these aims. Also, another goal is a desire to venture into new markets or expand current ones [4].

The value that this can deliver to the organization and the relationship between portfolio management, project management is referred to in figure 4.7. The value of using portfolio and project management is to do the right thing in the projects and programs in order to achieve the desired results. Also, PPM aligns programs/ projects with an organization strategic' goals to manage many projects/programs throughout the evaluation of every project/program and measuring its value [27]. According to the author [8], the portfolio should align with the organizational obejectives, strategies and goals.

- Obejectives: Specific achievement for this year.

- Goals: Statements will describe the organization want in order to achieve in the following 2-5 years. Many projects will execute to achieve organization goals.
- Strategy: Statements that will guide people to achieve the organization goals.

Figure 4.7: The Relationship Between Portfolio Management and Project Management



Source: [27]

In this Figure, PPM is doing the right thing right while PM is doing the right. 66% with 100% of a total ability to choose the suitable projects is the ability of existing portfolio management, while 75% is the percentage of project management abilities, with 100% of a total ability to provide projects on schedule, on scope, and on budget. With these projected abilities, 50% of the total possible assessment of work will be comprehended by an organization. Therefore, PPM consists of two beneficial disciplines which are portfolio and project management that can achieve good value. Also, these diciplines are essential aspects that can ensure the delivery of the organizations' strategies [27].

As the results from above, the benefits of using the PPM are:

- Selection of the project
- Re-prioritizing /Prioritizing of the project
- Monitoring of portfolios
- Assessment of portfolios
- Help management to correct its action
- Project closure and release [4].

4.3 Important Stages to Build a Profitable Portfolio Procedure

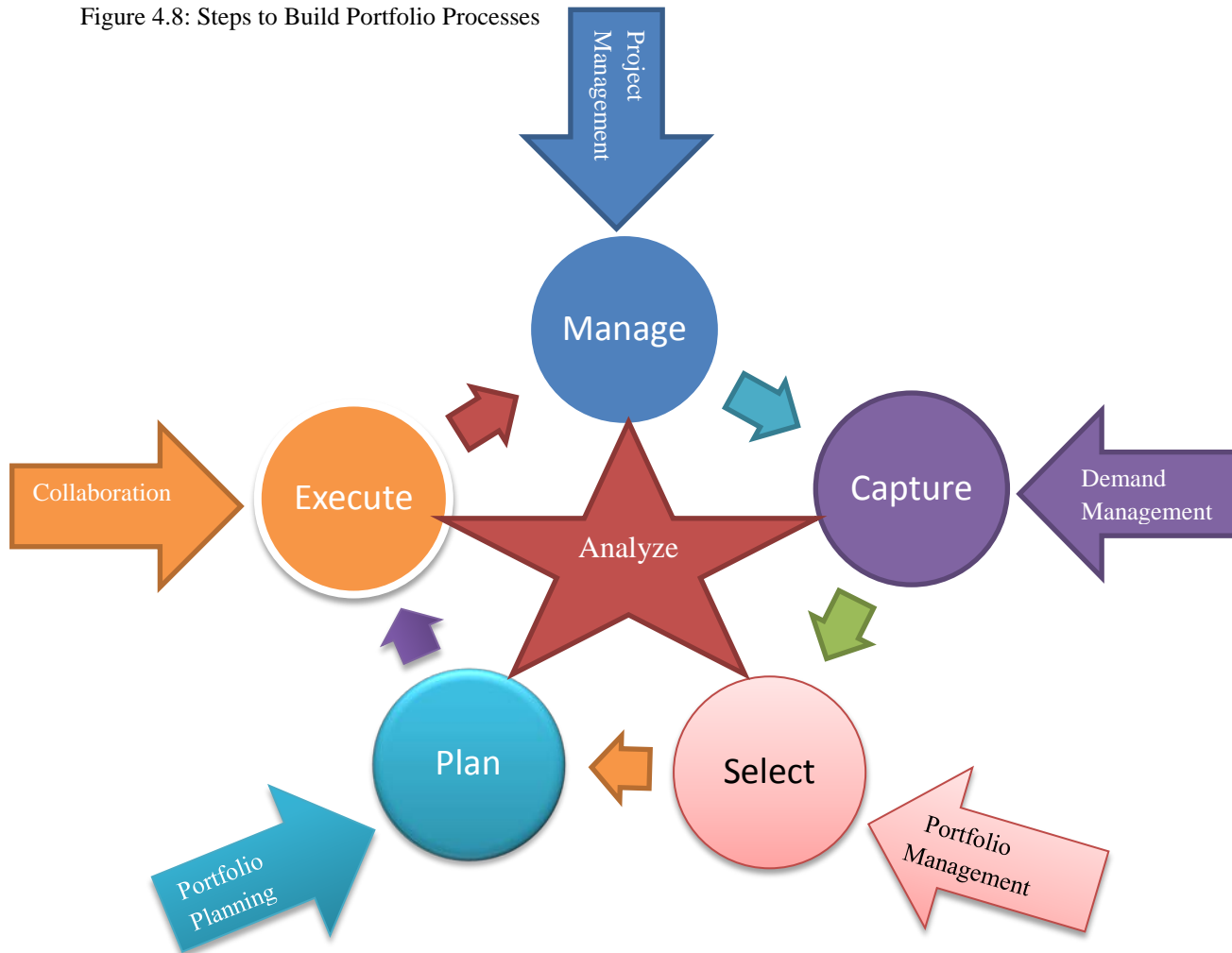
The continuous cycle in figure 4.8 refers to the PPM process which is selected and captured based on key analytics, metrics, managing, execution, and planning. Many organizations are taking into consideration three important keys in order to build portfolio management, such as to [10]:

- Determine a portfolio management structure
- Define a plan for portfolio management
- Determine key evaluation analytics and metrics

There are many ways that can improve Portfolio, such as the following [8]:

- Define customer expectations
- Determine objectives
- Make performance goals
- Collect metrics
- Communicate
- “Introduce process improvements”

Figure 4.8: Steps to Build Portfolio Processes



Source: [10]

After organizations have processes for selecting, defining and executing their portfolio, they can build process steps for portfolio management. There are ten essential processes for building portfolio management [10]:

- Identify Items of a Portfolio
- Define Items of a Portfolio
- Evaluate Items of a Portfolio
- “Select a Portfolio
- Reassess a Portfolio
- Approve a Portfolio

- Transition to Project or Work Initiative”
- Communicate, report, and track a portfolio
- Accommodate and Adjust for Changes
- Repeat these processes as necessary

Therefore, there are four steps of processes the portfolio that refers in table 4.11:

Table 4.11: The portfolio process steps

Prepare	Plan	Execute	Harvest
Categorization	Evaluation and Selection	Authorization	Reporting and Review
Identification	Prioritization and Balancing	Activation	Strategic Change

Source: [8]

In the table above, the first step is preparation for category and identifies the portfolio management. This can be categorized the portfolio by product types, business lines and units, locations, strategic goals, etc. Also, the organization goals, objectives and strategies will be identified. The second step is to make plan. This step will assess, select, prioritize and balance the right portfolio with the organization strategic goals. In this step, proposes and proposals of each function will be evaluated in order to implement the right projects and programs. Also, assess criteria; this includes business, risk-related, financial benefits and human resource -related criteria. For example, evaluation business criteria mean that it will assess business impact, employees and customers’ satisfaction and so on. Business case will be written in selection step which is consistent with projects/ programs in order to achieve the organization goals. Also, in selection step will review and ensure the financial process. The organization will ensure that business case and objective are prioritized.

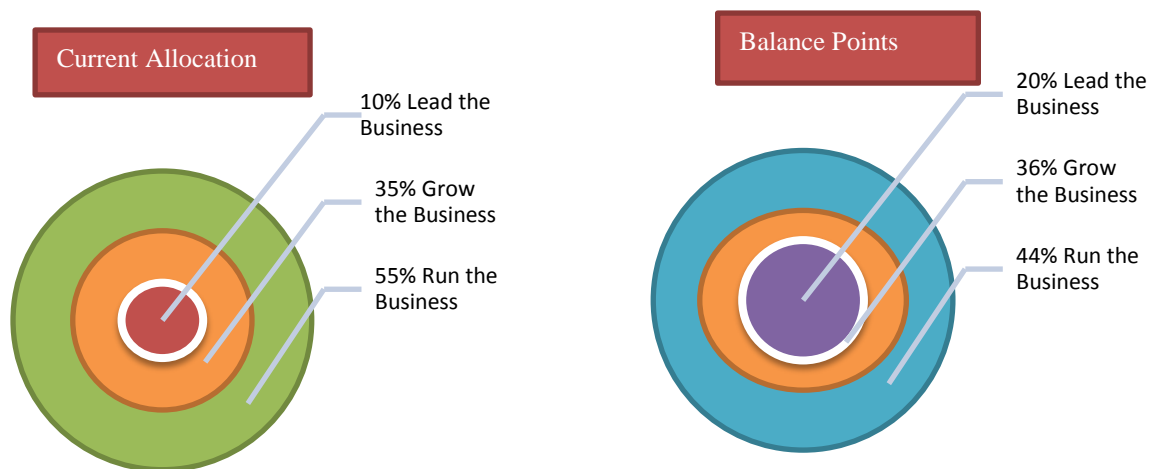
Third step is to execute the authorization and activation. Authorize actual work for portfolio will be determined in this step. Development lifecycle and start the process of project management will be activated. The last step is harvest; which means the results. In this step will make report and review about the final results, and change the strategic according to the results. In this step also will review portfolio every month by portfolio managers in order to update portfolio status reports [8].

4.4 Portfolio Balance

There are three major elements of portfolio management which are [35]:

- **Fit:** In this element, the opportunities will be identified and determined the project fit with strategic objectives.
- **Utility:** In this element will define and analyze which project is needed in order to achieve its utilities for the organizations.
- **Balance:** In this element PPM will select, balance and develop the project portfolio. A balanced portfolio is one of the most important tools for PPM. PPM is responsible for a balanced portfolio to achieve the organization objectives. In order to balance a portfolio, PPM should define optimal points of the portfolio to balance work resources. Also, PPM should make adjustments in order to balance project requirements (see figure 4.9). For example, if the current project year's balances show low, medium and high risks that are 70%, 15% and 5% respectively, the next two years might be 40%, 30% and 10% respectively.

Figure 4.9: The Propose Balance Points



Source: [8]

Figure 4.9 shows that the current allocation in percentage for this year and rebalance for the next two years.

This figure illustrates the guidelines of work prioritization and is not rigid criteria. This also will help PPM to determine future state. By balancing the portfolio points PPM can achieve the organization strategic priorities.

Therefore, to balance a portfolio, PPM needs lower management cooperation [8].

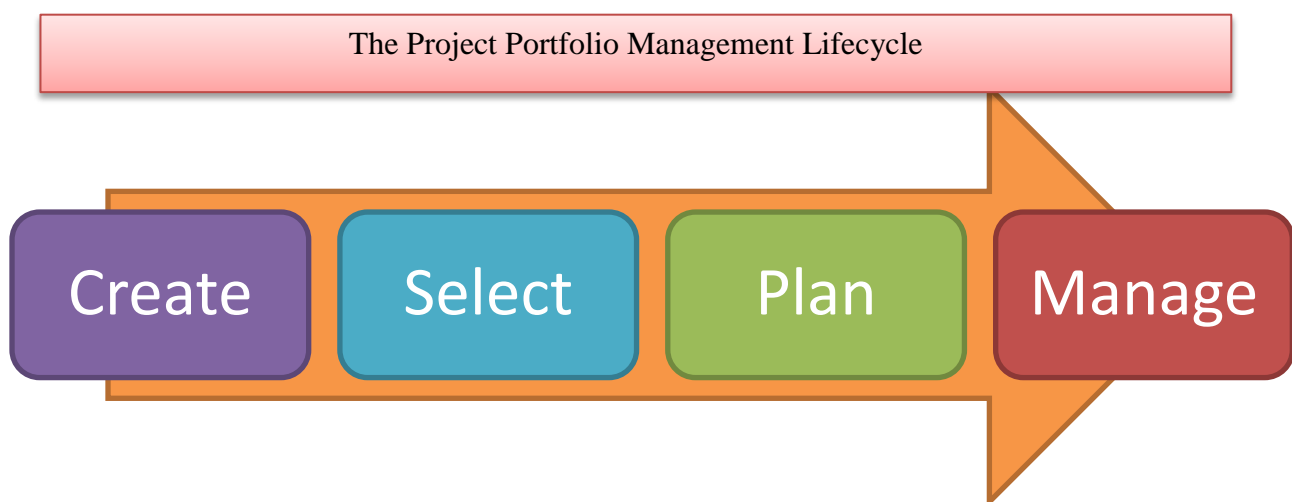
4.5 PPM lifecycle

Implementation of an organization's approach, its stages and technical expertise can be achieved when portfolios, programs and projects are specified and defined. Consequently, an efficient strategy should be followed in order to achieve the ultimate objective of governance process. This strategy refers to PPM lifecycle [27]. The lifecycle of PPM activities are:

- Fund, qualify and identify programs/projects that cover the strategy of the business. Manage business resource requirements.
- Meeting the PPM strategies through measuring the projects/programs performances.
- Taking important actions related to programs/projects that are not contradictory to PPM goals and commitments.
- Improving the PPM through continuous implementation of processes.

PPM lifecycle is displayed in Figure 4.10, which reveals many activities. First of all, projects/programs that deal with the business plan can be recognized and properly financed. Also, organizational resource requests can be administered [4]. Therefore, a general lifecycle can be applied for portfolios, programs, and projects. This lifecycle is shaped around four main PPM steps, 'Create → Select → Plan → Manage' [27].

Figure 4.10: Portfolio Management Lifecycle

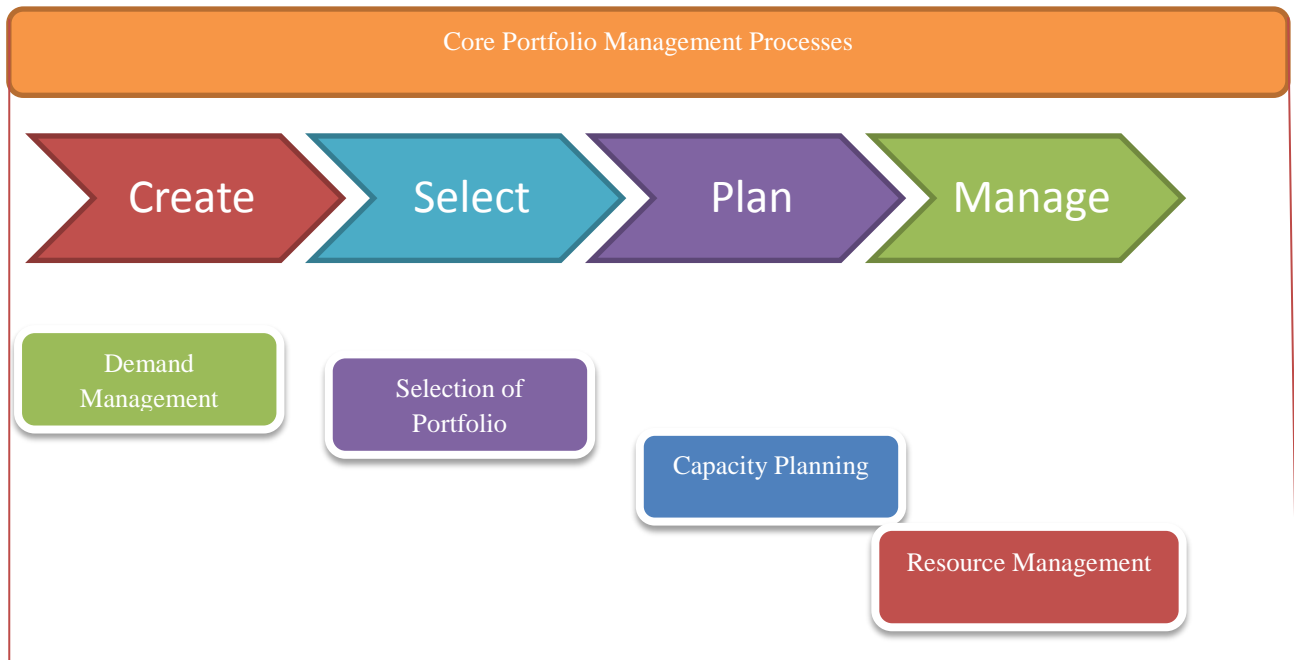


Source: [27]

4.5.1 Core PPM Processes Overview

All the lifecycle phases (Create, Select, Plan, and Manage) have many core processes, which can lead to significant advantages and abilities as shown in figure 4.11 [27].

Figure 4.11: Core PPM Processes



Source: [27]

4.5.2 Create

In this stage, there are many actions that deal with strategic goals, intake of demand, and metrics. The main PPM processes in this phase are:

- Demand Management: In this process, formation of business cases and workflow in order to assist assessment of work demands can be recognized.
- Portfolio Reporting: Visibility of all requests can be reported in this process.
- Team Cooperation: During this phase, ideas can be shared, and project requests can be captured by team members and communicated. For instance, an issue in operations might be identified and then a project will be responsible to manipulate the issue.

- **Program Management:** In this process of the creation stage projects and programs descriptions can be shaped. For some organizations, programs are recognized as part of an annual budget sharing plan. Each program is considered as an important business goal. During the budget year, project management pursues programs aims. Consequently, each program deals with a subdivision of the program goals.

The Main advantages of this stage are listed below:

- All work demands can be captured for preserving a verified source for work requests.
- All priorities of approach in evaluation and decision-making can be identified. Also, information during the PPM process can be reinforced by structured templates, which are comprised of standard metrics and valuation criteria.
- The right business authority can be identified to maintain investment by supplying the right information to evaluate the proper business cases. Therefore, planned workflows can facilitate routing and tracing business situations [27].

4.5.3 Select

When the formation of a project portfolio list has been completed, the next stage is selection. It comprises of all actions associated to the process of decision-making and other PPM processes, which are listed below:

- **Portfolio Selection:** Using appropriate criteria in a project portfolio inventory is crucial. Therefore, project evaluation will be tested strategically and financially; constraints will be specified. This will help to choose the investments that match with the organization's plans.
- **Financial Management:** In this phase, financial limitations are considered as important keys. Decisions are made by project portfolio management to agree on programs and projects and the budget will be specified.
- **Portfolio Reporting:** Portfolio selection debates can be reinforced by supplying reports. These reports include information related to the project ranking, charts results and a mutual and appropriate opinion of the whole project portfolio to the governance committee.
- **Team Cooperation:** A deeper understanding of information in a project portfolio can be the result of good teamwork, which can be done by discussing questions and answers between team members.

- **Program Management:** The selection step includes processes for the programs prioritization and the insertion of program-control in the go/no-go process of the project making decision. Prioritizing programs is achieved by identifying the programs' portfolio.

The main advantages of the selection phase are listed below:

- The process of decision-making can be more efficient by open debate of business strategies and goals.
- Long-term acquisition can be guaranteed by improving the process of portfolio identification. This process comprises of consistent strategy and fiscal return.
- Approach of portfolio selection can be logical. This will help to specify particular features depending on evaluation metrics of the project portfolio.
- Development portfolio mechanisms can be used to attain efficiency, which means that the maximum portfolio value can be achieved by optimizing the process of the projects chosen [27].

4.5.4 Plan

Planning and implementing resource tasks can be achieved at the plan lifecycle stage. The stage includes other PPM processes, as they are listed below:

- **Capacity Planning:** In this process, resource requests can be specified, and the project portfolio delivery timetable can be regulated. As a result, resource deficits and excesses will be reduced.
- **Resource Management:** This comprises identification of specific resources to the work request, such as predicting their obtainability, and settling resource disagreements.
- **Project Scheduling:** It includes scheduling an accepted project to begin on a specific date by forming a comprehensive strategy. To achieve that, project's work breakdown structure (WBS), dependencies, and restrictions related to the WBS are needed, to be defined.
- **Financial Management:** With detailed project timetables, financial management is comprised of resource and cost assessments and allocation of budgets.
- **Portfolio Reporting:** In this process, predictions of resource use can be reported to classify resource under/over utilization; outlines of project timetables can be stated to observe the delivery time of project portfolio and predictions of expenses.

- **Project Reporting:** To ensure effective project implementation, scope, goals, timetables, and funds are defined by creating project charters.
- **Team Collaboration:** To guarantee the quality of decisions and resource tasks, teamwork between executives, project directors, resource directors, and project team members is important in order to begin projects.
- **Program Management:** Includes the scheduling of the program, which is a result of collected timetables of each project.

The main advantages and abilities of the planning phase are listed below:

- Recognize gaps between demand and available resources. Resource use can be forecasted for better planning for the ability of the organization.
- For best use of resource, the complete roadmap can be used to supply instructions to project managers and resource directors to connect the results of ability planning in order to maximize utilization of resources.
- The obtainability of resources, project assignments and making particular resource decisions can be done with the right resource running abilities.
- Strategies can be completed before taking the next step toward implementation [27].

4.5.5 Manage

Actions of the delivery and following up of projects are comprised of the management lifecycle stage. The main PPM processes in this phase are listed below:

- **Resource Management:** Briefly, this process includes identifying resources to assignments.
- **Project Scheduling:** During project implementation, project schedules can be followed up and predicted to ensure effective project delivery.
- **Financial Management:** To guarantee that a project is on the right path within its fiscal limitations, real project expenses should be followed up, and future project expenses should be predicted.
- **Time Reporting:** Actual time spent on a project should be reported. This will help to track the progress of the project and forecasting project problems.
- **Portfolio Reporting:** To handle the implementation of a project portfolio, the condition of the projects' portfolio, budget, scope, and timetable should be followed up; the issues impeding the project members can be solved.

- **Project Reporting:** To ensure good communication with stakeholders, reporting the growth and condition of the project to many stakeholders is required by the project directors.
- **Team Cooperation:** By sharing information and resolving project problems, teamwork is important to decrease implementation dangers and raises project achievement.
- **Program Management:** In this process, if the projects within the program are in healthy condition, then the program is on the right path. Correspondingly, a wide influence on all projects will happen when the scope of the program is altered.

The advantages and abilities of this step are listed below:

- Good performance between team members, efficient cooperation is required when the right people work together on an assignment or concern.
- Project portfolio performance should be observed, and directions should be managed. This helps to assess the strategies and objectives of the organization.
- Risks, concerns, and conditions of projects should be evaluated to improve the communication between the project team and project investors.
- To increase project performance, budgets should be followed up and compared to real and predictable values, so that reformative activities can be taken to recognize issues and solve them.
- The portfolio can be improved to preserve consistency with the business plan [27].

Chapter Five

Project Risk Management and Issues

Introduction

Project managers know that risks and challenges are inherent in their projects. They should understand what types of potential risks that they could face in order to prepare and plan to minimize these risks and take advantage of the positive risks. Also, they should have skills and knowledge that enable them to deal with project risks and issues. An issue is defined as an event that is imminent or has already occurred and has impeded a project's progress. Project managers should immediately take action in order to remedy and address the issue. On the other hand, project risks are uncertain and undesirable events that, if/when they occur, will have an effect on budgets, schedules, scopes and/or quality; this might cause a negative effect on the project's objectives. Negative risks within projects will affect the implementation of those projects. Also, this threat may cause delays, increase costs of the project, and sometimes project failure.

On the other hand, positive risks will provide some opportunities and advantages to the projects. For example, making an acquisition early to take advantage of a price decrease in materials and using optimal resource techniques are considered positive risk consequences that will help the organizations lower costs. Therefore, the organization should take risk management into consideration by addressing risks consistently during the implementation of their projects in order to achieve success. The idea of implementing risk management is to control conceivable future events [25].

5.1 Project Risk Management

Project risk management is one of the most important components of project management, which has the objective to ensure that projects will succeed by limiting the impact of negative events. Also, it will ensure that projects will succeed by increasing the positive results within those projects. The goal of risk management is to identify the probability and impact of risks, reduce or limit these risks and planning for them in order to make better decisions related to those risks.

There are three important things that affect the perception of risks they are the perception of control, time and available information. When project risks appear to be under control it will influence the project teams' behaviors and reactions. For example, project teams tend to work more comfortably on a project when its risks are well planned and under control. When a risk is in the distant future teams usually believe they have more control of the situation. Also,

when project teams have sufficient information about risks, this will have a positive effect on their actions. (David Lendry PMP, 2015). Controlling and managing risks are very important tools that project managers have for developing an organization's strategies and increasing the chance of success. Time and available information are very important to reduce the impact of risks. Therefore, project managers and their teams face many risks and issues during the project lifecycle. Identifying these risks require skills and knowledge that enable them to make critical plans for them.

Project risk management steps are identifying, planning, response, qualitative analysis, quantitative analysis, and controlling risk throughout the project's lifecycle [25].

5.1.1 Planning Risk Management:

In this step, project managers will set up and define the process and methodologies to manage project risks. Also, project managers communicate with stakeholders to obtain their input in order to make sure that risk management is performed and supported throughout the entire lifecycle of the project. In this step, project managers work with team members to develop plans for risk management [25]. In order to set up plans for managing project risks, project managers should follow these steps:

- Identify the level of risk within projects and define the budget for risk management planning
- Identify methods and tools to perform risk management
- Identify when the risks will occur in order to perform the risk assessment and how to monitor it
- Identify probability, matrix, and impact of risks
- Schedule all activities of risk management before the start of the project
- Discuss risk management in every meeting with project teams
- Communicate with project teams about the benefits of risk management
- Risks should be reported, documented, and subsequently managed by project managers [44].

These steps will help project managers to make good plans for managing and addressing risks in the future.

5.1.2 Identifying Risks:

The second step of project risk management is to identify the risks that could impact the project. In order to determine the risks, project teams require the ability and knowledge that enable them to document existing and anticipated risks. They can identify project risks by dividing them into risk categories and

subcategories; this will help the project teams to understand the high, medium, and low risk impact on projects. Identifying risks is a repetitious process throughout the entire project lifecycle because new risks can occur during the project's progress [25].

5.1.3 *Qualitative Risk Analysis*

Qualitative Risk Analysis is defined as a process of analyzing and prioritizing risks by assessing the probability of impact and occurrence. Project managers should produce a list of root causes to analysis the impact of risks. The input of qualitative risk analysis refers following:

- **Risk management plan:** Qualitative risk analysis is composed of responsibilities and roles for execution risk management, risks categories, schedule for risk management, budget, definitions of impact matrix and probability.
- **Scope baseline:** This step can be assessed by examining the project's scope baseline.
- **Risk register:** The information that can be used to prioritize and evaluate risks
- **Enterprise environmental factors:** This step will provide context and insight to the risks estimation
- **Organizational process assets:** This step includes the information on previous, similar finished project that can be influenced the qualitative risk analysis.

In addition, this step is utilized to evaluate the impact of risks, likelihood of occurrence, and prioritize actions in order to respond and resolve those risks. The project managers and their teams evaluate each risk that has been identified and described. They also should assess risks that affect their projects' goals and their likelihood of happening in order to set up plans to handle these risks in the future. The importance of this step is to help project managers limit the uncertainty of risks and to focus on prioritizing tasks in order to deal with them[25]. After project teams identify project risks, including the possibilities of their occurrence and the results of these risks. Then they should follow the steps below in order to analyze the risks.

- Discuss project risks with project teams and stakeholders in order to establish matrices that project teams intend to use.
- Risk information can be reviewed from the step of identifying risks.

- Discuss the risks with teams and assess the probability of them occurring through asking the teams, “How likely is it that risks will occur?” Highlight the results that all teams agreed on.
- Assess the results of a risk that may occur through asking the teams, “What will be the impacts if a certain risk occurs” Highlight the results that all teams have agreed on.
- Prioritize, categorize, group, and rank the most important risks that may occur based on the results of the qualitative analysis [44].

5.1.4 *Quantitative Risk Analysis:*

According to the author [25], “Quantitative Risk Analysis is the process of numerically analyzing the effect of identified risks on overall project objectives” (p. 333) The effect of determined risks on project goals can be processed by numerically analyzing the risks in order to reduce uncertain events in the project and to produce information about quantitative risks. Quantitative risk analysis includes the Monte Carlo technique. The Monte Carlo technique is a simulation tool that can be used to analyze uncertainty within a project. Project managers use the Monte Carlo technique to analyze the impact of risks and uncertainties in order to provide an assess schedules and costs. Full Monte is approach that can help project managers to understand the schedule risk analysis and allows them to perform Monte Carlo in efficient manner in order to estimate the possibility of completing their projects. It also uses to calculate and achieve the important of dates for milestones and activities in the project in detail analysis. It identifies the potential project critical paths in order to reduce uncertainty in deliverable outcomes. Monte Carlo is defined a scientific technique that will help project team’s account for project risks in making decision and quantitative risk analysis. Also, it is a process for evaluating a project’s schedule and budget for individual tasks. This method can identify paths, activities and time percentages that generate many possible performance results for the whole project. This will help project teams in making important decision about these risks. This can help to assess the impact of the quantified and identified risks. This is a very important technique that helps project teams to analyze the uncertainty of events and project risks through forecasting these risks and estimating schedules and costs of the project. In some cases, it is difficult to implement this technique [3].

5.1.5 *Risks Responses:*

Developing options and taking action to limit negative impacts on project goals and enhance the positive events will be achieved in this step. Some risks will have negative impacts on project scope, budget, schedule, etc. The high impact risks require taking immediate action in order to reduce and limit these risks [25]. Responding to risks is a very important action that project teams must do in order to move the project forward with achieve their goals.

Project teams can identify three levels of risks according to their impact and probability of occurrence such as high, medium and low. They should respond immediately to the high probability and high impact of risks according to their plan and assess medium risks in order to prepare plan for them. They might not take action to low impact risks because it is not necessary to spend time on them at this point of the process [8]. The author [15] has classified risk responses into mitigating, retaining, transferring, and avoiding them.

- **Mitigating Risks:** It is a very important aspect to reduce the probability of events that could cause negative impacts on projects. Project managers and their teams should focus on reducing and limiting the probability of risks that will help them to avoid potentially costly overruns.
- **Retaining Risks:** Some risks are costly and so large that project teams cannot respond to them. In this case, project teams need to accept these risks.
- **Transferring Risks:** Transferring risks to another party is considered good practice, but does not change the impact of those risks. The use of insurance is a strategic method to transfer risks and shift them to another party to provide coverage for those risks in order to ensure success. However, sometimes, this method is impractical because conditions and unknown risk events might be difficult to predict and therefore insurance may be expensive.
- **Avoiding Risks:** In order to eliminate the risks, project teams should change the project plan. Project teams cannot eliminate all risks but some risks can be avoided before the start of the project [15].

5.1.6 Control and monitor Risks:

According to author [25], Controlling Risks is the process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project.” The effectiveness of this approach will be improved during the lifecycle of the project in order to continuously improve risk action. Project managers and teams should make sure that every risk is clearly and fully understood in order to respond and support the development of the project. This is a very important step to improve and monitor risk responses. Risk control is one of the most important steps in the project risk management process because it helps organizations to monitor and manage all steps of the project. This also helps the continued improvement of the risk management process. Some objectives of the control risk step are that:

- The assumption that the project is valid
- Risks analysis shows that evaluated risks will change
- The procedures and policies of risk management are being followed
- The likelihood for schedule or budget changes should be adapted to the current risk evaluation [25].

5.2 Explicit vs. Implicit risks:

Project managers need to identify the level of risk “how risky their project may be.” They should understand that there are two levels of risks, one of which are distinct risks (explicit) and the others are overall project risks (implicit). The explicit risk is an individual risk that might occur in a project during the process of reviewing risks, assessing, and responding to those particular risks. On the other hand, implicit risks address the risks of an entire project. These levels of risks will be distinguished as two concepts of risks which are explicit, individual risks that may be encountered during a project and implicit risks within an entire project. Project managers should distinguish and be responsible to make decision about these levels of risks by understanding and managing these types or risks. They should also have the skills and knowledge of how to develop and manage decisions for limiting and reducing these risks [16].

5.3 Risk categories:

Categorizing risks is an important method to diagnosis potential risks by classifying and separating them based on the probability of their root causes. Project managers should identify potential risks early to avoid high risks to finish a project within budgeted schedules in order to achieve the expected results. Projects can have risks in many categories, such as the WBS to classify the areas of affected risks, the RBS to category sources of risks, and other beneficial project phase categories [25]. This will help project managers to manage project risks by identifying and organizing risks in efficient and consistent methods. Project risk categories can be split into the following [33]:

- 5.3.1 **Schedule:** These can be categorized into two areas of risks such as (1) the estimation of schedules and goals are not realistic. (2) Implementation of programs will fall short of a project's schedules and goals.
- 5.3.2 **Initial Cost:** This can be through inaccurate and incomplete project cost estimates at the beginning of a project.
- 5.3.3 **Costs of programs and projects Life-Cycle:** This risk is defined to achieve the cost of life-cycle objectives. This includes planning, retirement costs, operations, and development.
- 5.3.4 **Feasibility:** Define scope, technical, schedule parameters, and cost to achieve the performance objectives can be risks of inadequate ability to develop and execute a project within these feasibilities.
- 5.3.5 **Overall project risk Failure:** This risk is a negative impact that it will result from one or more occurrences of identified or unknown risks. This risk might be result initiative to project fail.
- 5.3.6 **Technology:** This risk is composed of application of software, principles, engineering theories, and techniques. This may result the final product failure because of delivered late, expensive, and unacceptable to the clients.
- 5.3.7 **Strategic:** Change the strategic objectives can be high risk. Also, the program needs is not clearly align with project strategic objectives.
- 5.3.8 **Project Resources:** It is comprised of addressing the sufficiency of teams, tools, schedule, and funds that are important ingredients for executing the projects.

5.4 Steps for Solving Risks and Issues

Project managers will face risks and issues within their projects lifecycles. They should have the skills and the abilities to handle them. Many organizations struggle to find ways for solving projects' issuers, such as over costs and delays within project. There are many methods that can help project managers to solve and deal with risks and issues, such as using DMAIC steps in order to improve the process of any project. This can be through solving issues and preparing plans for potential risks: The DMAIC steps are:

- **Define:** In this step, project teams will define the potential risks and issues that the project teams might face.
- **Measure:** In this step, project teams will measure high, medium, and low level risks and issues.
- **Analyze:** In this step, project teams will analyze the risks and issues in order to set up solid plans.
- **Improve:** In this step, project teams should apply this knowledge in order to make improvements effectively.
- **Control:** In this step, project teams will monitor, control plans and improve them in order to manage new risks and issues.

5.5 What causes a project fail?

There are many risks and issues that could result in the failure of a project. Inaccurate planning, scoping and defining project are common caused project failure. Also, other causes that might be results in project failure are unexpected or unanticipated changes, unrealistic and inadequate scheduling. In addition, when the project has inappropriate funding, inaccurate resources for project, inability to estimate its costs, lack of evaluating its risks, this might be reasons for project failure. Project managers may mitigate these causes when/if foreseen before of time of starting project [2]. Occasionally, the complexity within a project can cause project failure because project teams are lacking the skills and knowledge that enable them to handle these complexities. Generally, there are many causes that when they occur, might be cause project failure, such as:

- **Incorrect goals and visions:** Project goals and visions are misaligned with organization strategic objectives.
- **The lack of risk management plans:** Failure to set up solid plans for risks and issues ahead of starting projects
- **Requirement issues:** Lack and failure to define project requirements
- **Team issues:** Project managers delegate tasks to insufficient team members

- **Stakeholder engagement issues:** Failure to engage and identify project stakeholders
- **Incorrect estimations and planning:** Failure to estimate plans to complete a project
- **Decision making problems:** Key decisions making are made by inexperienced people [41]

6. Conclusion and Recommendation

In conclusion, project management is one of the most essential parts of many companies because project management is one of the key roles responsible for achieving the strategic goals of organizations. These companies depend on their knowledgeable and skillful project managers to achieve their goals because they play a very important role in accomplishing their objectives. Organizations should rely on their project managers to lead teams for their success. Successful project managers have knowledge and skills which enable them to run projects smoothly. Also, they have the ability to diagnosis potential risks and any other problems in order to set up solid plans. In addition, these abilities enable them to manage a diversity of projects. Therefore, skillful and knowledgeable project managers can take multiple aspects of a project into consideration in order to run a project successfully. The results from the research above indicate that most developed companies have made their organizations successful by their skillful and knowledgeable project teams. For example, many organizations in the United States have been improved by their projects leaders. Leadership skill is one of the most important skills for achieving project success. Leaders with good leadership skills have the ability to run a project successful through motivating, encouraging and leading project teams to success.

Many projects and programs evolve within an organization, but the question is how the organization will select and prioritize their projects and programs in order to align them with their strategic goals. These organizations require portfolio project management approach that will help them with their selection and implementation of their projects and programs. Therefore, project portfolio management helps organizations to execute projects that will fit in with their objectives. In addition, organizations should consider using the Agile method in order to continually improve their projects. As the research shows, the objective of using the Agile approach is to deliver high product value and support collaboration between project teams and their customers in order to optimize costs. The Agile method is an important approach that can help organizations to improve their projects in order to provide optimal products to their customers. This will help project teams to become more flexible with their projects. Also, it embraces change within an organization in order to satisfy their customers in an effective manner. Therefore, the Agile method is potentially a useful method for Iraqi organizations.

The results from the research above indicate that value of project management can be measured through its portfolios that align its projects and programs with an organization's strategic goals. This will add value to the entire organization. Also, project managers can contribute to customer satisfaction, higher quality products, complete projects more quickly and improve work environments. Project managers can deliver higher value to the organizations through

estimating and setting solid plans for project schedules and costs in order to achieve the organization's strategic objectives and building higher performance project teams. The research shows what values that project management can bring to their organizations:

- Finishing projects more quickly
- Achieving customer satisfaction
- Aligning projects and programs with the organizations strategic goals
- Developing accurate project costs and schedules
- Focusing on metrics more predictably
- Cost effectiveness
- Having solid plans for projects
- Solving problems more rapidly and preparing for future risks
- Building productive teams
- Communicating effectively
- Improving financial management
- Developing a productive work environment

Therefore, the results from the research above indicate that project management values can trickle down within the entire organization. Iraqi organizations should use these methods in order to improve their businesses. Also, they should apply these project management skills, knowledge and hire managers who have good leadership skills in order to achieve improvement and success within their projects. They can acquire these skills and knowledge by training, educating, and getting experience with mentoring from skilled project management professionals. Because businesses in Iraq are expanding and developing products into global markets, this requires successful project management. However, most Iraqi companies are still struggling to improve and implement their projects and programs in order to be more productive. Also, these organizations struggle to implement the right projects to fit with their strategic plans. Developing project portfolio management is a very important method that Iraqi organizations should use in order to prioritize and select effective and profitable programs and projects. There are many steps that Iraqi organizations should follow in order to success their project management, such as:

- Evaluating their organizations needs
- Building effective teams

- Improving their project managers skills and abilities
- Communicating effectively
- Prioritizing and selecting projects and programs that will fit in
- Changing their traditional methods to the Agile methods, however, they should know how the Agile work

Therefore, Iraqi organizations should improve their project management field in order to grow their profits and achieve these values. Also, by applying project management skills and knowledge, they will have the following benefits

- Their profits will grow faster than others
- Their structures will be developed
- Building effective teams within their organization by using the Agile methods
- Limiting and reducing lost costs and time by evaluating and estimating accurate schedules and costs.
- Getting the benefits of using the productive portfolios

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