

# What Challenges are to be prioritized by the Project manager to gain Stake holders or Customer's Confidence?

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**Abstract—** A Project manager being an official representative among the stake holders and the customer the biggest or highest challenge is the Customer. The aim of this paper is to work on the different challenges coming under the triple constraint and turn them to opportunities which result in gaining customer confidence. Project manager's ultimate goal is to satisfy the client/customer. Out of different challenges, (s) he can prioritize them and place them across the different phases of the project management life cycle. The methods or approach used are primary and secondary data collection using the famous and reputed project management web sites and the secondary data from the respective software people. The end result of this paper is show casing the aim and a new proposed dimension is the Customer satisfaction which had achieved when concentrated on the Quality diamond which consists of Scope, Cost, Time and Quality. The result also mapped the challenges to the respective Project management life cycle phases which can help the project manager to plan them accordingly.

Keywords—software Project management; Customer; project manager; charter; creativity; creep; confidence; culture; cross-functional; cohesiveness.

## I. INTRODUCTION

A project manager is the official representative for a project to the customer and other stake holders from the organization point of view.

What is a Challenge?

English meaning of the challenge is "A call to engage in a contest, fight or competition". Coming to the software Project Management a challenge is the one which is supposed to help a project manager discovering his/her abilities to drive the project through the project management life cycle phases. The challenges pave way to the opportunities. Each and every challenge observed as part of the life cycle phases, if properly analyzed they help in providing different opportunities.

A project manager (PM) holds responsibility in completing a project successfully right from initiation phase to the closure phase. PM adopts various internal procedures to accomplish the required task in completing the project. A PM plays around the cost, time and Scope, the so called triple constraint of project management. (s) he can win the play or be successful unless the relationship with the team members and the stake holders is clear and professional. All the play is to gain the customer satisfaction

or confidence. In General, most of the times PMBOK or Project management studies mention and the key challenges are Cost, Time and Scope.

## II. THREE DIMENSIONAL MODEL

The three challenges are also called as the triple constraints of project management [1]. A PM has to undergo many sub challenges as part of this triple constraint. The mentioned sub challenges if properly analyzed or attended could lead to beautiful opportunities in completing a successful project.

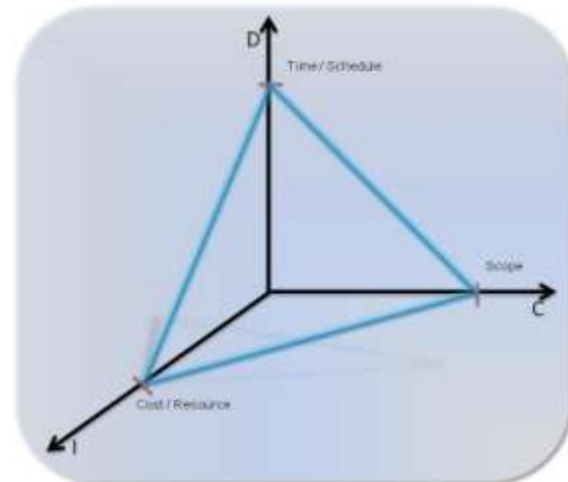


Figure 1: Three dimensional Triple constraint model

A slight modification to the existing triple constraint model, I have aligned them to the three dimensions or axes. The axes are C, D and I. C relates to the customer satisfaction or Interaction. D relates to the Delivery to the customer. I relates to the core competency or Intellectual property of the project.

### A. Why Scope is aligned to the C, so called customer axis?

Scope is the primary and major challenge for a Project manager. Nevertheless, Scope is the King of the project, which the customer is also.

Scope means the work that needs to be achieved or accomplished to deliver the project. Project manager has to take care of scope in terms of delivering a project without delay and should not make it

over budget. Project success can also be improved with better scope management. Below are some of the sub challenges coming under the scope factor?

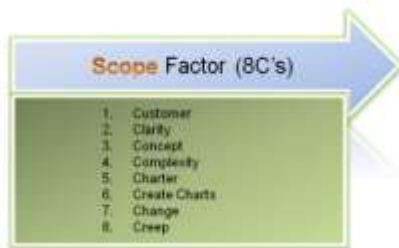
Customer, Clarity, Concept, Complexity, Charter, Create Charts, Change and Creep.

The entire above mentioned sub challenges provide a clear idea on developing opportunities to work on the project.

Why these sub challenges are coming under Scope?

Primarily, a customer is the primary contact for the requirements. PM/Business Analyst (BA) has to interact with the customer and get the requirements. They have to understand the customer properly and need to know what customer needs and have to anticipate the end product based on the customers competitors. This is a considerable biggest challenge and which in turn lead to the scope definition.

A PM/BA need to have a clear picture of what is “to-do” to fulfill the customer needs. Clarity is needed at this front.



A concept is to be visualized, which is thought provoking. Unless and until the concept is clearly defined it's not an easy task for a Project manager to start.

Figure 2: Scope factor Challenges (8C's)

Change is the most critical challenge for a project manager as well to the other stake holders. Although the changes are often done with the best intentions during a project, unless and until it is properly addressed it could become a major hurdle for the project completion.

Creep is a significant risk across all the software projects. A software/Project/Product is developed with a proper identification of the customer need. Creep becomes a major challenge when a project is improperly or insufficiently defined. Creep can also happen with,

- a. Lot of delays happening
- b. Confusion around the tasks
- c. Cost overruns.

Gold plating of a project is so dangerous and which leads or ends up in scope creep.

#### A-> 1. *Customer*

Customer or Client is the most important person/King as far as project is considered. Project manger's first challenge is customer/client. To become an efficient project manager, streamlining of self is necessary and the focus needs to be on the following.

- a. Engaging Customer as part of the team.
- b. Planning at least one formal status call with Customer as well delivery team.
- c. Formalizing weekly status reports.
- d. Revisiting or managing the issues and risks often weekly upon availability of project time.
- e. Communicate effectively, by keeping everyone in the project up to speed with both formal and informal (emails, phone calls, etc.) modes of communication.

#### A-> 2. *Clarity*

Clarity at all levels or phases is necessary for a project Manager. Communication is the most important element to project success and yet it remains a challenge throughout the engagement. The information which is being propagated by a project manager needs to be clear and needs to dissolve weak links to soothe conflicts, to report status, and to revise the schedule.

#### A-> 3. *Concept*

Concept is one of the critical challenges being faced by the project manager in the Initiation phase. This is to evaluate the new idea on how the project is going to be. A concept is an orderly and efficient approach to suggest, review and judging the merit of a new project idea prior to the significant resources are committed to the official project. And this is to ensure that resources get allocated only to worthwhile projects. This also helps in procurement of requirements and other resources.

#### A-> 4. *Complexity*

Project complexity is often recognized in a general way, but not completely understood by everyone. Just the term “Complexity” causes some degree of difficulty because of the different interpretations given the definition and perhaps a person's experiences and training. Exploring the fundamental meaning of “complex” is helpful in establishing a foundation from which to build. “Complex” comes from the Latin word *complexes*, meaning entwined or twisted together. During execution when the project manager may be struggling with problem solving, discovered complexity can be overstated.

*Technical Complexity* - Technical scope of the product and service may be viewed as creating a specification that leads to a design to meet the client's needs.

*Management Complexity* - Management complexity includes the business aspects of the project, staff, relationships of the project to others, and project organization to name a few. There are many variables that can add complexity to the management of a project like financial arrangements, Design of management, Lack of sufficient details for schedule, project staffing, and organizational design w.r.to project.

#### A-> 5. *Charter*

What are a Project Charter and its need?

This is also called as Project overview statement (POS), is the signed document that formally defines and authorizes a project. This is like reaching to an agreement, which includes scope,

objectives and constraints. The Project charter keeps all the people involving in the project on the same page, such that the goals of the project are often understood correctly by the stake holders. To help a project manager the project charter should contain the following.

Project Authorization, Project manager Authorization, Key stake holders, Project Goals, Project priorities, Scope statement, Product requirements, Project Assumptions, Constraints & boundaries, Initial project risks, List of deliverables, Cost estimates, schedule estimates, Integrated change control and Criteria.

#### A-> 6. *Create/Charts*

Scheduling is based on experience and the more experience you have, the more accurate your schedule will be. However, you can still produce an accurate schedule by following some simple rules. Never give off-the-cuff or unconsidered responses, i.e. don't commit to something you can't deliver. Eliminate uncertainty wherever you can. Build in plenty of contingency to cope with variation. Pick the right level of granularity. Schedule the unexpected. Project management is the art of handling the unknown. Often events and circumstances you could not have foreseen will interrupt the flow of your project. It's your job to take them all in your stride. Schedule for the most likely delays and cope with them should they arise. If experience or instinct tells you that a certain type of task will overrun, then anticipate it, pad it with some contingency and make sure you have adequate resources on hand when it comes up.

#### A-> 7. *Change*

"It is always easier to talk about change than to make it".

Change is a technique which can be of technology change, Organizational change, Scope change, requirement change and so on. A Project manager should not be resistant to the change. Changes to projects are almost inevitable. As project work progresses, discoveries are made, problems are encountered and solved, new requirements are discovered. Any change that affects one of these constraints can seriously affect the ultimate delivery of the project. For instance, if the deadline is tightened, you will need more resources to deliver the same output. If the resources available are reduced (usually in the form of lost people), you will likely need more time to deliver the output. If the output requirements change (usually added functionality or features) you will need either more time or more resources. When changes take place they should be properly documented with reasons. Just because the person is requesting the change, doesn't mean they have the authority to approve the change. The project manager must get this request in front of the person with the authority to approve the changes. [3]

#### A-> 8. *Creep [2]*

When inexperienced project managers start on their first few projects they usually underestimate the power of scope creep to cause a project to fail. This is why knowing how to avoid scope creep is absolutely vital to a successful project management career and trying to implement the following points

1. Write an accurate project scope statement
2. All the accurate project requirements are documented and approved.

3. Strictly enforce the change request process.

How to avoid Scope Creep: Never forget what your project scope is. Everyone will continually try to get you to make seemingly "small" scope changes, which you should resist.

#### B. *Why Cost is aligned to the 'I', so called competence /Intellectual axis?*

Cost or resource is one of the forces of the triple constraint. It is one of the key challenges of a project management. Cost control always depends on the existing model of the organization.



Figure 3: Cost factor Challenges (6C's)

This is purely dependent on the existing competence or the intellectual property of the organization. If the company is not well equipped with the skilled team and the sufficient resources always the client have to invest more in building the competencies. Hence this so called cost factor is aligned to the Intellectual or competence axis. This helps in analyzing how to estimate the cost of the project and also helps in going cost overruns if for any minor scope changes. A project manager has to have this in place.

#### B-> 1. *Cost*

Project managers are in a tough spot: They're the liaison between the customer and the project team that will complete the customer's project. In most organizations, it's generally easier to get more time than money, and there's usually more concern about how much than how long. For projects to be successful, someone has to foot the bill, and until the estimate is requested or provided, it's not a mystery, just a constant dread.

If the customer demands new deliverables in the project scope, however, a price tag is usually associated with those demands. When the project scope changes, the budget usually has to change as well. Changes generally cost something, and that means a budget increases.

#### B-> 2. *Competence*

A competent professional is generally understood to be someone who "can do the job." What then is project management competence? What are knowledge, skills, and attitude that project managers must possess? It is generally agreed that the overall scope of competence covers these three areas.

*Gaining Knowledge, Become skilled, and having the Right Attitude*

Knowledge consists of the general and specific project management theory, concepts, practices, procedures, processes, and methodologies that apply to an industry and the complexity of projects being conducted.

Attitude is the personal and professional demeanor exhibited by a person while performing his or her work. In the context of

*competence*, this would be a positive outlook and an ability to not take one's self too seriously. Attitude includes drive, energy, good instincts, and dedication. A project manager must demonstrate the correct attitude when working with all the project stakeholders, e.g., project team, senior management, customer, and special interest groups.

#### B-> 3. Control

The term control has several meanings. Those new to project management are initially dismayed by the use of the term "control," because they mistakenly equate it with the concept of authority. In the world of project management, control has very little to do with telling people what to do, dictating their actions or thoughts, or trying to force them to behave in a certain way— all of which are common interpretations of control. It's about continually making course adjustments with one main objective in mind—bringing the ship into safe harbor, as promised at the start of the voyage. And the successful project voyage includes identifying a specific destination, carefully charting a course to get there, evaluating your location throughout the voyage, and keeping a watchful eye on what lies ahead. Overall project control requires an eye on the future, as this formula shows:

$$\text{Calculated Present Variance} + \text{Estimated Future Variance} = \text{Final Project Variance}$$

Maintaining proper control really requires that you consider three parameters: (a) where you are, compared with where you're supposed to be; (b) what lies ahead that can affect you; and (c) where you're going to end up, compared with where you said you would end up.

What Are You Actually Controlling?

Schedule: Was the project completed on time? (How long did we take?)

Cost: Did the project come in at cost? (How much did we spend?)

The other two targets are tied to the deliverables of the project:

- Functionality: Do project deliverables have the expected capability? (What can they do?)
- Quality: Do the deliverables perform as well as promised? (How well can they do it?) [5]

#### B-> 4. Caution [6]

A caution is a technique part of project Management is to be considered when traversing from one phase to another.

This is like when the work related to the present phase is completed and moving/shifting to the subsequent phase.

A classic example of phase-shifting is from a development phase into a testing phase. During the development phase, the project is highly motivated to hit published milestones. And if you can show that important milestones being met, sponsors and other stakeholders will leave you alone. Early in the project, the project manager's message is "get it done on time and within budget". This leaves scope as the only variable the Team Leads and Contractors can manage. And so they manage scope, which means they compromise on scope in favor of reporting "on time, and within budget" to make you happy. This *false-positive* reporting creates a bow-wave of work which builds and builds and eventually crests and crashes later in the project, when

development deliverables have been accepted, fees paid, and the ability to finish the work is impaired.

#### B-> 5. Culture/Cross-functional

Cross-functional teams are significantly different from teams that are aligned on one functional level. For example, a group of marketing people generally "speak the same language," and they have a solid understanding of what their department is trying to accomplish. With a cross functional teams we need to have representatives in different potential areas. This diversity is both the reason why cross-functional teams can be highly effective, but it's also the reason that they're often problematic. A strong leadership is essential and this fosters team unity and is a key to success. Because of outside pressures, this type of team must have internal strength and commitment to survive. Here tasks are to be tightly coordinated and organized and free to use the talents and expertise when required. [3]

#### B-> 6. Cohesiveness

I generally use the following five techniques or methods to keep my remote projects and teams running smoothly: Setup a communication plan from the start. Use a collaborative PM tool. Hold weekly internal team meetings. Expect participation from each member on formal customer calls. Meet for major phase kickoffs [3]

What I want to do is discuss this chart as it relates to project management and from a positive point of view. Instead of looking at this from five dysfunctions, the author also listed 5 functions of a cohesive team. The cohesive team consists of qualities like Trust each other, engages in unfiltered conflicts around ideas, decision commitment and holds one another accountable for delivering the plans. They focus on the achievement of collective results.

#### C. Why Time is aligned to the 'D, so called Delivery axis?

Time is the most important axis of the triple constraint, if the project is delayed; there is a risk of project getting failed. Time is aligned to delivery because the project is to be delivered on time with Quality. Based on the Scope and the Cost/Resources of the Project the Schedule is to be prepared by the Project manager which should include the projected time of delivery. This schedule always helps in tracking of the project status and what's pending?



Figure 4: Time factor Challenges (6C's)

A project manager always has to track the schedule and plan ahead not to go with the delays in execution.



#### C-> 1. *Communication*

Communication is the most important element to project success and yet it remains a challenge throughout the engagement. Project manager has to communicate quickly and efficiently at all levels of business. The project manager must be a confident communicator and must be connected within the organization. The well-connected project manager can break down barriers and get critical tasks done for his projects that others cannot. Customers want and need a project manager who is ready to lead and make things happen and can work well with all levels within his own organization for the success of the projects he manages.

#### C-> 2. *Co-ordination*

A Software Project requires some level of coordination and some level of management. Project Coordination is generally informal and is performed by most project team members in the course of performing the daily project tasks. Most of the time Project coordination deals with the things that are not plan able and are too minor to be formally planned or most importantly with the unexpected. The meaning of coordination is to ensure that the defined project objectives are met within the constraints of time and budget, and with the required level of quality.

#### C-> 3. *Creativity*

Why to bother about Creativity?

Creativity is a matter of survival and a must approach to grow and innovate. Organization that doesn't innovate inevitable ages and decline. Creativity is the art of producing new ideas, approaches and actions. A Project manager should overcome the two types of barriers to creativity

*Personal Barriers:* [5] Beliefs and attitudes, taking life seriously, Time availability, thinking the self is not creative and comparing to others. Fear of failure.

*Organizational Barriers:* Risk avoidance, Change resistance, Leadership style, Group think, Lack of motivation

Creativity helps at project management for problem solving, improving process and final product as well services. It gives Quality and value to management as well helps in turning risk to opportunity.

#### C-> 4. *Conflict*

Conflict in project management is inevitable. The potential for conflict in information systems development projects is usually high because it involves individuals from different backgrounds and orientations working together to complete a complex task. The cause of conflict in team projects can be related to differences in values, attitudes, needs, expectations, perceptions, resources, and personalities. Proper skills in dealing with conflict can assist project managers and other organization members to handle and effectively resolve conflicts which can lead to a more productive organization as a whole.

How a conflict is resolved?

The modes are Confronting, Compromising, Smoothing, Forcing, and Avoiding.

#### C-> 5. *Critical thinking*

A source defines critical thinking as “the purposeful and reflective judgment about what to believe or what to do in response to observations, experience, and verbal or written expressions or arguments” [5]

Despite all the planning done, project managers are often plagued with a litany of uncertainties. On the other hand, a complacent project manager might react diametrically opposite by “letting things happen and decide what to do when they do happens”. Critical thinking throws project managers and their teams into situations that may not have existed yet or have possibilities of occurrence. Critical thinkers perch from the roof of the project to be more observant rather than ignorant of situations.

#### C-> 6. *Closure*

Project closure is the last phase of the project management process. The project process is completed and documented, and the finished product is transferred to the care and control of the owner. The long-term objective is to build a project management repository to document best practices, lessons learned, and examples of various documents that may be developed during a project.

### III. QUALITY DIAMOND

The So called three dimensional triple constraints have resulted in adding the fourth dimension “Quality”.

Why Quality needs to be added as fourth Dimension?

Quality of the end product is essential when pertaining to the Customer as well the other stake holders. A product/Project without any quality check may not be stable in the field and cannot withstand in the market in front of the competitors.

When the Scope, time and Cost are properly planned other factors or challenges automatically follows the project execution and helps in building an end product or project with Quality.

Hence Quality is sitting on top of the basic three triple constraints as the fourth dimension of the project management.

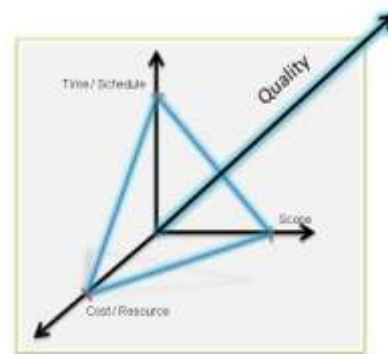


Figure 5: Fourth Dimension of the Triple constraint

And in continuation to the Project management phases Quality has become a part of the Project management life cycle and got integrated across different phases of the project management life cycle.

As an integrated one and the so called fourth dimension it has converted the triple constraint to the Quality diamond. This Quality diamond is the end product or the project which customer would be looking for. What it means? The answer is so simple; Most of the people love to have Diamonds with them. This means it's more precious for them. Like, wise here for the customer the end product or the project/service is important and is more precious for him/her. And luckily after including the Quality to the so called triangle or triple constraint it turned out as diamond.

Quality has its own importance pertaining to the Project management. It has been monitored by every organization after integrating that as part of the development phase of the Life cycle. Apart from the development life cycle Quality has to be integrated right from defining the scope of the Project. This can help in identifying the defects as part of the requirements and also other design related issues.



Figure 6: Quality Diamond of Project Management

IV. FIFTH DIMENSION OF PROJECT MANAGEMENT

Post considering of all the Challenges and the sub challenges under each force of the triple constraint a quality product given to the customer yields a positive energy and it is the new or fifth dimension of the Project management. The outcome of that is the customer's satisfaction or the confidence. A Project manager have come across all the challenges across the project management life cycle and converted them positively to the opportunities in building up a Quality product to be delivered to the customer. All the time, the best project managers can play or juggle all the three triple constraints like hot potatoes. This could lead in helping making some good decisions which would be effective between the time, cost and scope including the Quality.

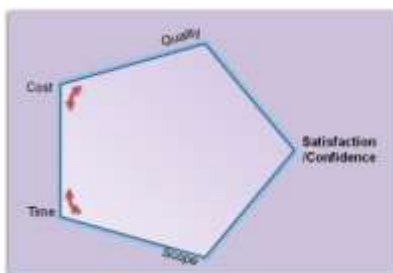


Figure 7: The new, fifth Dimension of the Project Management

To achieve the fifth dimension Customer confidence and satisfaction, the Projects must, Be delivered within cost; Be delivered within time, Match to the agreed scope. Meet the customer requirements on quality.

All the four can help in defining new dimension or vertices which can be a "feather in PM's cap" mean the customer satisfaction or the confidence.

V. CONCLUSION

The proposed mapping of challenges to the three triple constraint factors looks acceptable. Also the new solution's like Quality Diamond and the fifth dimension of the Project management are helpful for a project manager to go ahead in gaining the customer's confidence.

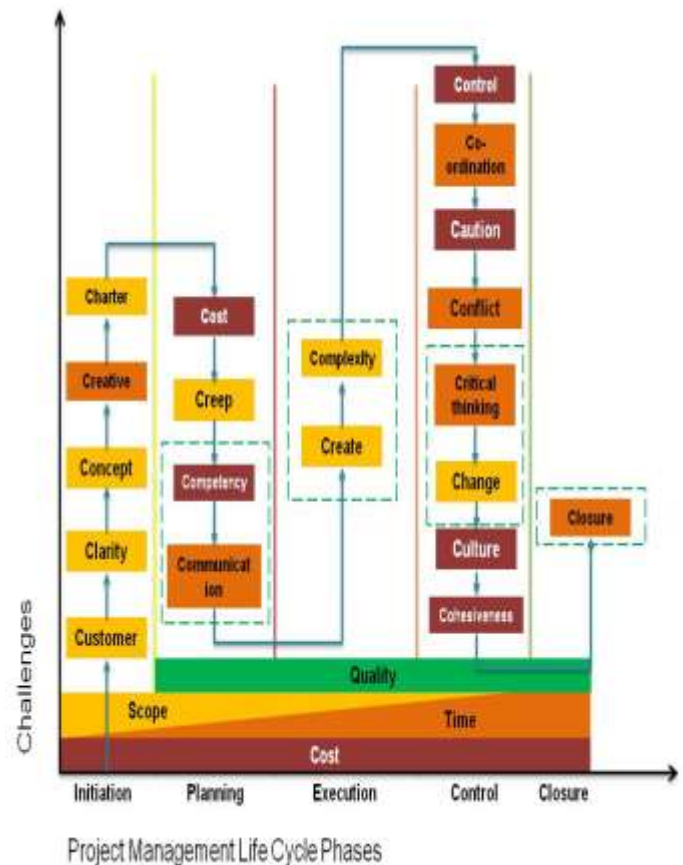


Figure 8: Prioritization matrix (Challenges Vs PMLC Phases)

A detailed Questionnaire is circulated among different levels in a software organization ranging from team leads, Engineering managers, Project leads and Project managers. Following is the proposed prioritization matrix which mentions what challenge is to be prioritized at different phases of the Project management life cycle.

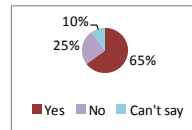
A sample population of 50 members is taken and the Questionnaire is circulated. Out the responses received the "no" and disagrees were partially given by the Project leads and Engineering managers. Most of the accepting answers were given by the Project managers and the Team leads. Most of the responses reflect to the proposed priorities. Below are the responses for some key questions.

## VII. ABOUT AUTHORS

Q-1: How far is the three dimensional model acceptable for analyzing the challenges?

a. Yes b. No c. Can't say

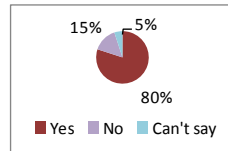
The responses are



Q-5: Does the proposed challenges under each factor are suggest able?

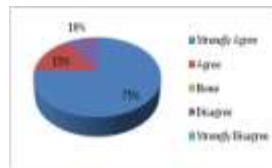
a. Yes b. No c. Can't say

The responses are



Q-35: A project manager being an official representative of a project does need to ensure the gaining of the Customer's or stake holder's confidence?

The responses are depicted in the pie chart.



Q-49: Does the fifth dimension can be achieved by the PM with the prioritized distribution of challenges across different phases of the Project management life cycle? The responses are depicted above.



To draw a solution from the responses, A PM has to undergo the respective PMLC phases by turning the challenges into the opportunities which help in driving the project. There may be a minor amount of chance that some challenges might get overlapped to the other phases. A future study is suggestible to present more details on the individual challenges and also the fifth dimension of the Project management.

A Project manager has to concentrate more on the I-axis, which is building the competence of the team and organization. This can be utilized well for any scope changes are easily addressed without any delay, scope creep or budget overrun.

As a result the achieving the fifth dimension of project management, project require a quality closure.

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