Project Quality Management in IT Projects

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Introduction

In project management, meeting and exceeding customer and stakeholder expectations is essential for the guaranteed success of your IT project. Maintaining and fulfilling all project outcomes require more than planning and execution, but a special focus on quality management. This blog post will help you as a project manager understand the aspects of project quality management, and how they relate to managing your IT projects.

Fundamentals of Quality Management

The definition of quality can be hard to understand. The textbook definition describes quality as the total characteristics of an entity that rely on its ability to meet all required and implied needs(Schwalbe). This simply means defining and meeting the expected standards of project deliverables. Quality can also be defined in two parts:

- Conformance to requirements: this means that the path and products of the project meet written requirements(Schwalbe)
- Fitness for use: this means that the product was used as it was supposed to be, or the design was effective.

Now that we understand quality, the purpose of your role in project quality management is to make sure that the project satisfies and meets expectations. To understand these expectations, your team must secure relationships with stakeholders and customers to find out what type of quality is needed. It is important to explain to your team the written project goals versus the quality expectations, and how both are equally important. Quality must be on an equal level with project scope, time, and cost (Schwalbe).

Project quality management can be split into 3 different processes: planning, managing, and control:

- Quality plan: this section is for defining relevant quality requirements and standards for your project, and how to meet these expectations.
- Managing quality: this will transform your quality plan made in the first step, into a series of quality activities. These activities will output things such as quality reports, evaluations, change requests, project updates, etc. (Schwalbe)
- Controlling quality: this will involve tracking project results for correctness and satisfied customer expectations

Quality Plan

As a project manager, it is important to plan, prepare, and predict to successfully execute all desired expectations. Training as well as familiarizing yourself with correct quality management tools to implement, will allow you and your team to plan accordingly to meet desired outcomes. As stated before, there are a variety of quality tools you can implement in your plan to help manage your project.

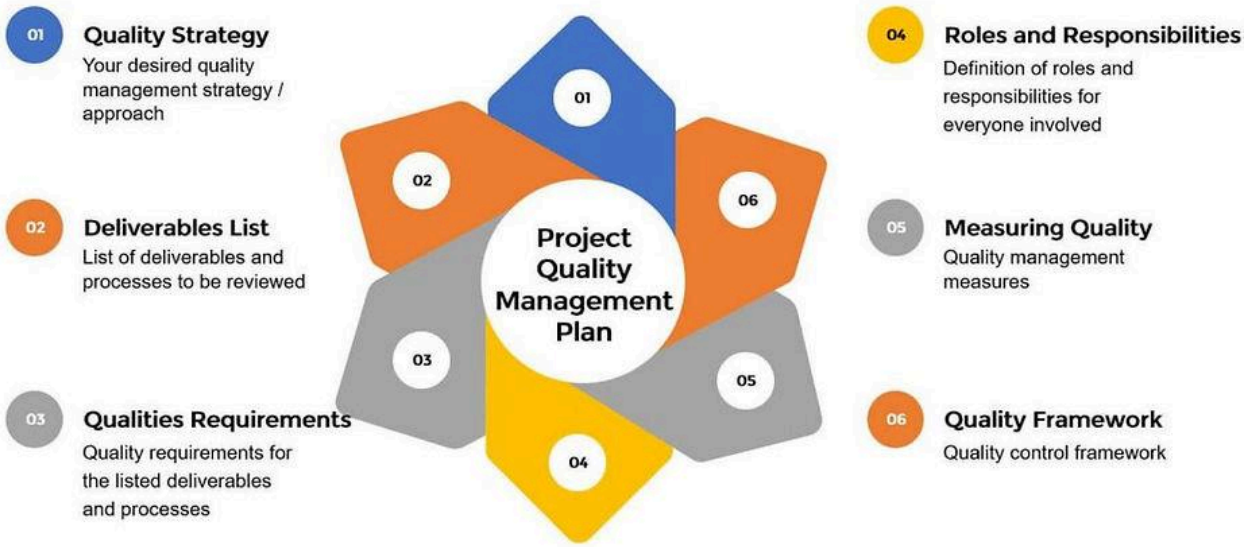
- Design of Experiments: this tool will help you with identifying the most important variables that will impact your project outcome. This tool can also be utilized outside of variables, with issues such as cost and schedule trade-offs (Schwalbe).

As a project manager, it is your job to implement the correct tools and scope aspects in your quality plan, to determine the quality expectations for your IT project. While all aspects of the project should be discussed and planned with your team and stakeholders, managing the quality of your project is the project manager's responsibility.

Managing Quality

This stage involves translating your plan into activities/actions, which is often referred to as quality assurance. Managing quality is not a one-time event but an ongoing process that requires consistency. There are quality assurance tools that you will be able to implement during this process:

- Benchmarking: This tool helps generate ideas for improvements by comparing specific internal and external projects or products to your current project (Schwalbe).
- Project quality audit: Outside of a normal checklist, conducting an audit would evaluate different aspects of your project by collecting data on the status of completion, time, budget, or project maturity (Malsam).
- Forecast: this tool gives you a clear overview of your process, resources, and project advancement. Forecasting helps you identify issues in advance, which allows your team to plan and manage these variables in advance (Taylor). You can also use this tool when managing your team, for evaluating their time and consistency on other similar projects to predict current outcomes.



Controlling Quality

Improving quality is the main framework of the control step in quality management. This can be confused with quality assurance which deals with maintaining and preventing issues, while quality control is for inspecting and identifying issues. Here are some processes and tools that you can implement to quality control your project:

- Acceptance decisions: this process will determine if the produced outcome of your project will be accepted or rejected. If stakeholders reject, you will have to go through a process called rework.
- Rework: this process is for bringing rejected items back to project and stakeholder standards. As a project manager, you must be detailed with quality planning and assurance, to prepare for any extra expense in the rework.
- Process adjustments: this process is for fixing and preventing any quality problems, based on quality control evaluations. These will include updates to organizational processes and guidelines in your project management plan (Schwalbe)
- Control charts: a graphic tool that can determine the control level of a process. If a process is in control, then there is no need for any changes. If a process is out of control, you must identify the events to adjust or eliminate from the process (Schwalbe).

Quality, Scope, and Testing

So far, we have discussed most of the aspects of quality management. We will now see how they relate to managing IT projects.

Project scope management can also come into play when discussing the quality and the performance of your IT project. There are five main scope aspects that you should keep in mind when evaluating the quality of your IT project:

- Functionality: this is the system's measured ability to carry out expected tasks. You would get these tasks from the features, which are the specific attributes that appeal to your project users. When planning, your team must list which functions and features are mandatory or optional.
- System outputs: these are the reports generated by the system. In your plan, define what your screen should look like including layout, design, user accessibility, etc.
- Performance: this is how well a system performs, referring to the speed, responsiveness, and efficiency of the IT system.
- Reliability & Maintainability: reliability refers to the stability and consistency of the system, while maintainability addresses the maintenance and upkeep of the system; how easily can the system be upgraded, modified, or repaired?

A common mistake made during IT projects is the placement of testing. It is common for IT project teams to rely on testing in the last phase, instead of having more detailed planning into the design and analysis of the product. Testing is vital to the life cycle of your project and needs to be done in every single phase of your project.

- Unit testing: this is to test individual components of your project or product, to evaluate defects.

- System testing: this will test the system as a whole to make sure it's working properly together.
- User acceptance testing: independent tests done by users to understand the business impact of the system and not the technical issues (Schwalbe)

Conclusion

Quality is a major factor in the outcome of your project/product. Quality planning will help you develop your pathway, managing quality will help you convert that planning into actions, and quality control is for measuring and monitoring the success of those actions. Testing is also an important process that you need to implement to fix any defects. Through testing and scope implementation, your IT project will have time to develop better quality. There are many different tools and techniques you can implement to help you assess your project's quality. Understanding your stakeholder's expectations, as well as the quality management goals will help you exceed all project quality standards.

References

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