Quality Management of Projects

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Abstract
Quality is defined as the ability to use appropriate and the amount offered for the money spent, and above all these, satisfying customers' needs.

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Introduction
Objectives for any project should include objectives relating to quality. For an efficient management of the project, management objectives relating to the desired end result of the project must be the same as those of quality management, to meet the customer's expectations as much as possible cheaper and in a timely manner. “Project quality management represents all procedures, processes, workflows and activities by which to measure the level of quality, identify means and ways to mitigate the deviation between planned levels in actual levels, aiming to increase quality and not its size. Quality management also includes project and the quality of the final product, because the risk in making the beneficiary's needs in both areas can have negative consequences for all stakeholders.”

Project quality management approach in ISO 10006 standard
According to the standard ISO 10006 quality management project consists in analysis and evaluation of progress including:
- Planning for the evaluation of progress - establishment of the system of reference, specifying the purpose, requirements and processes the output elements for each assessment
- Assessment of progress
- Output elements of the evaluation (reporting the results of the project to the objectives of the project)

Quality objectives
Based on the quality policy of the organization and the needs of consumers, general manager of the organization establishes overall objectives in the field of quality and how to achieve them:
- Increased effectiveness;
- Increasing market share;
- Increase customer satisfaction;
• Improving communication in the Organization;
• Increasing quality of products and services to meet customer’s requirements as well;
• Increasing confidence in its own forces;
• Reduce costs.

Quality objectives are complementary to other objectives of the Organization:
- Market share;
- Finance;
- Profit;
- Environment;
- Social issues.

Quality objectives include:

a) tactical objectives - which leaves the needs and requirements;
b) strategic objectives - that represents a quantitative targets expressed in connection with what has decided to carry out company.

**Project quality management principles**

The principle of customer orientation - as long as you depend on client organizations, they must seek to understand their needs and their applications and to make sure that they will be perceived, transmitted and recorded.

The principle of leadership - managers are the ones who coordinate and train the subordinates in the achievement of the objectives of the organization.

The principle of employee involvement - staff employed within the organization, regardless of their hierarchical level you occupy, you have to allow it to establish their own targets but that of course will be correlated with the mission and vision of the organization, thus leading to the facilitation of work, good products or services, to reduce costs and to a better control.

Principle of management based on system approach - what is identification and management processes as a system.

The principle of process-based approach - a result is achieved in a more effective manner when related resources and activities are managed as a whole.

**Project quality management processes**

Quality management of projects comprises the following processes:
- Quality Planning;
- Quality Assurance;
- Quality Control.
According to guidelines published by the Project Management Institute, modern quality managers complete project management since they both recognize the importance:

- of consumer satisfaction;
- of prevention since the time of the inspections;
- of managerial responsibility.

The processes of planning, control and quality assurance, quality improvement projects can be described by:

- entrances;
- Tools & techniques (methods);
- outputs or results.

**Quality planning projects** - involves the identification of objectives and conditions relating to the quality of the projects, as well as operational processes and resources needed to fulfill the objectives of quality.

**a)** *the ins has the quality planning process, are:*

- quality policy (intentions or general guidelines of the organization);
- defining the scope of the project (goals);
- product description (technical characteristics);
- standards and regulations that affect the project;
- outputs of other processes.

**b)** *Tools & techniques (methods):*

- Cost-benefit analysis that involves estimating costs (expenses) and benefits (revenues). *Costs < Benefits;*
- Benchmarking – is the method by which compares processes planned project with the best practices of other projects;
- The use of diagrams (flowcharting);
- Cause effect diagram (Yshikawa diagram) which sets out the existing relationships between the various cause and effect or the potential problem they create.
• The use of flow schemes or systems;
• Planning experiments-analytical technique that identifies independent variables with great influence on the dependent variable.

c)- quality planning results in the project include:
• Quality management plan describes how the project management team implements quality policy; the plan defines the quality requirements and processes of quality control;
• Operational definitions (metric) they describe the way in which quality is measured in project work. Major attention is given to metrics that indicate how the project advances, in terms of costs, hours of work, duration of the activities, deadlines for beginning and end of each work, productivity of work;
• Checklists.

Quality assurance is the planned and systematic activities (testing, acceptance, verification processes, quality programming and communication) implemented within a quality system and demonstrated as needed to complete trust in the fact that the project will satisfy the relevant quality standards or requirements concerning quality.

a)- inputs of the quality assurance process:
• Quality management Plan;
• The results of quality control - is the registration and measurement tests, tests made in a format that allows comparing performance;
• Operational Definitions.

b)- methods and techniques used in quality assurance:
• Tools and techniques used in the planning of quality;
• Quality Audits - that is according to the quality management activities project aimed at improving the performance of the project and may be.
  ∙ Internal audits;
  ∙ External audits that have a specific interest in relation to the project and which can be:
    ° Audits per second;
    ° Third Party Audits.

c)- the result of the quality assurance process:
• The main result of the quality assurance process is the quality improvement. This includes measures and actions that lead to increased effectiveness and efficiency of the project in order to satisfy the needs of all parties involved.

Quality control of projects involves techniques of operational activities and used for monitoring specific project results, during the project and for the elimination of unsatisfactory performance or results.

a)- quality control inputs:
• The results of the project;
• Quality management Plan;
• Definition of quality specifications;
b)- methods and techniques used in the process of quality control:

- Inspections - which include activities such as measurement, examination or verification of the trial of one or more characteristics of a product, process or activities in order to determine compliance with the requirements of project results;
- Control charts - are graphical representations that are represented, depending on the time, the results of a process
- Pareto Charts (effect-frequency) are used to obtain useful information about a process or an activity through the analysis of the negative aspects of the quality of the products or services provided. The underlying principle of this method is that only 20% of potential causes generates 80% of the effects and therefore is called Method 20-80. Frequency-effect diagrams were introduced in the study of the quality of the Romanian-born American scientist Joseph Juran
- Flow Charts;
- Analysis of trends (trend analysis) is used to detect irregularities linked to the technical performance of the project and compliance with the budget and program.

c)- the results of quality control process:

- Quality improvement;
- Decision of acceptance;
- Completing checklists;
- Adjustment Processes.
The quality of the projects costs

The quality of projects is not an end in itself, but making an analysis we can say that the deviations from quality, but also measures for planning, assurance and quality control should be valued in monetary terms as follows:

• Non-quality costs which may be external or internal causes;
  o An external cause - expenditure arising from guarantees, compensation and penalties paid
  o Internal cause – expenditure arising from irregularities in quality that can take the form of extra costs for reworking, retouching, retest, scrap, etc..

• Quality Costs can be differentiated as follows:
  o A quality planning costs for the study and prevention of errors;
  o The insurance costs for project performance evaluation;
  o A quality control costs, which represents the whole expenditure for quality monitoring.

Conclusion

“Create quality, aims and can improve at any stage of the idea – raw materials – finished product and every step of the decision-making process.

Design and improvement of the quality system is not an end in itself, but a means to increase efficiency in the long run, by taking into consideration of all factors and endogenous and exogenous, so with a strategic vision.”

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