Project Quality Evaluation – An Essential Component of Project Success

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Abstract: - In this article are presented aspects, elements and indices regarding project quality management as a potential source of sustainable competitive advantages. The success of a project depends on implementation of the project quality processes: quality planning, quality assurance, quality control and continuous process improvement drive total quality management success.

Key-Words: - project management, project quality management, project quality improvement.

1 Introduction

Project management is the art — because it requires the skills, tact and finesse to manage people, and science — because it demands an in-depth knowledge of an assortment of technical tools, of managing relatively short-term efforts, having finite beginning and ending points, usually with a specific budget, and with customer specified performance criteria. "Short term" in the context of project duration is dependent on the industry. The longer and more complex a project is, the more it will benefit from the application of project management tools.

Simply stated Dr. Goldratt indicates that "if a project is initiated to have a positive effect on the organization, then the sooner the project is completed; the sooner the organization receives the benefits. Therefore the constraint of any single project must be its cycle time (the time it takes for the project to complete). The constraint of the entire collection of projects of an organization, its portfolio, must be the combined cycle time of all of the projects" [1].

2 The Importance of Project Quality Management

The success of a project depends on the extent to which the organization manages to avoid initiating or action to minimize the effects of internal and external factors:

- internal factors:
  - erroneous assessment of the available resources for ongoing project;
  - poor planning of project activities (or activities for achieving the financial application, which has a negative impact on the possibilities of planning and carrying out project activities);
  - supply chain problems;
  - lack of resources (funds or trained personnel);
  - organizational inefficiency.
- external factors:
  - natural factors (natural disasters);
  - external economic influences (adverse change in currency exchange rate used in the project);
  - reaction of people affected by the project;
  - implementation of economic or social policy measures necessary for carrying out the project in good condition;
  - cultural mismatch between project objectives and activities taking place and environment project, which arises from ignorance of local specifics, such discrepancies lead to the rejection of the project by project beneficiaries to whom it is addressed.

All activities of the organization should be organized and managed as processes, which includes:

- identifying processes, customer - supplier and interactions between them;
- establish how the planning, operation and control of processes and responsibilities for the management
- setting needs measuring, monitoring and analysis of data obtained for continuous improvement processes.

3 Project Quality Management

Project Quality Management includes all management activities that will ensure the quality policy, objectives, and responsibilities and fulfill them through planning and improving quality through quality assurance and quality control.

The project quality management processes are:

Figure 1. Project quality management processes

Quality of project management not only refers to "time and budget," but to "specification and quality requirements".

According to ISO 9001:2000 quality management is all coordinated activities to direct and control an organization in terms of quality. In general, the quality control and guidance include establishing the quality policy, quality objectives, quality planning, quality assurance, quality control and improvement of quality (see figure below).

Figure 2. Project quality management

3.1 Project quality assurance

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The organization management and plan resource requirement identified by the annual revenue and expenditure includes resources for:

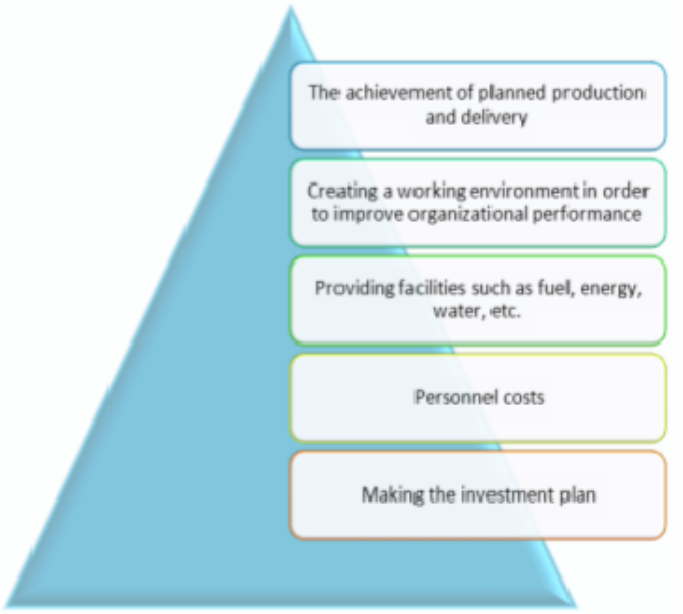

Figure 3. Project quality assurance elements

By making the investment plan aims to modernize the processes and controls, economic management and computerization of the management organization, upgrading to ensure compliance with the requirements of product specifications, modernization of equipment for support services.

3.2 Projects quality improvement

Juran's advocated ten steps to quality improvement [2]:

- Start with building awareness of the need and opportunity for improvement.
- Set realistic goals for improvement.
- Organize to reach the goals (by method to establish a quality council, identify problems, select projects, appoint teams, designate facilitators).
- Emphasis on training.
- Solve problems by carrying out projects.
- Progress must be reported.
- Give recognition to anybody who achieved.
- Communicate results with all concerned.
- Keep score by being quantitative.

- Maintain a regular momentum by making annual improvement part of the systems and processes of the company.

To improve the quality of products and services, managers must rely on the following principles:

- Customer focus.
- Adopt a new philosophy, abandoning the "acceptable level" of quality. We cannot survive with "acceptable levels" of nonconformities, defects, delays in delivery.
- Ensure the necessary inspection and testing equipment.
- Ensure proper tools to conduct business.
- Ensure processes, methods of surveillance and information system effectively on quality.
- Ensure continuous improvement of quality products and services based on a plan to become competitive and to remain in business. Constituted a fair and concise business plan, the organization will be at a higher competitive level.
- Periodic audits of quality system. It is proved in practice that it changes the quality of products especially before its audit. However, it is not necessary to carry out audits too often, as it may adversely affect the organization's staff.

A summary of the main specifications of the standards and opinions of the literature leads to the conclusion that the project quality approach must consider at least the following components:

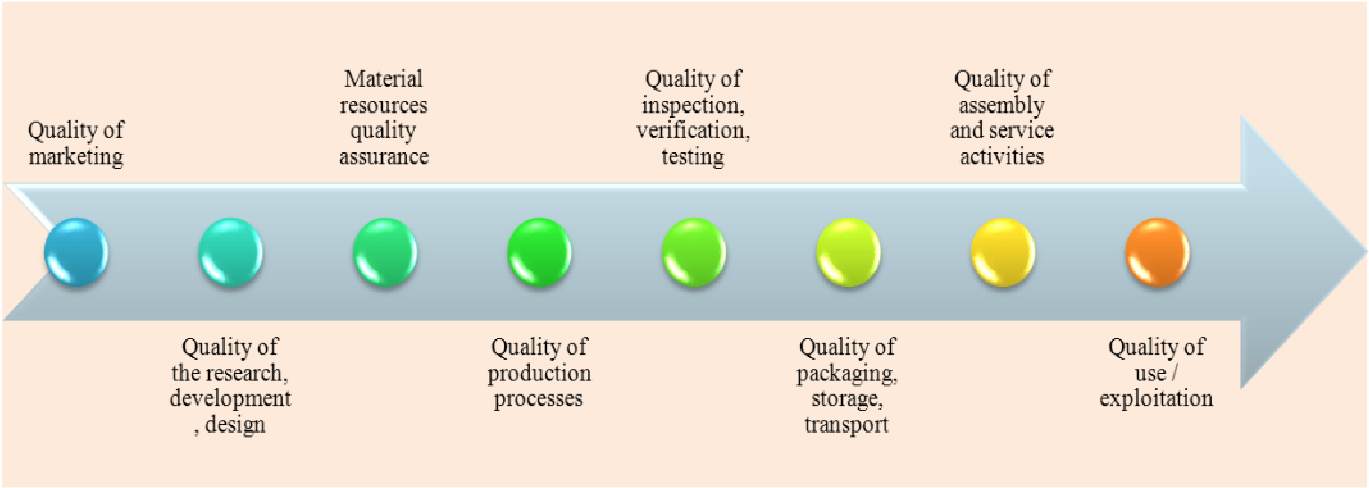

Figure 4. Project quality components

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It is better to prevent than to identify defects. Some organizations do not have sources available to pay claims, removing defects, etc., but they are much better able to control the organization. Thus, an effective control, flexible, timely can remove unplanned expenses.

The level of quality can be assessed with costs. It is normal for an organization to strive for the high quality products and services, but this procedure should not result in expenses that may cause, in turn, its bankruptcy. Thus, it is necessary to develop a budget for improving the quality and compared with expected profit. It is also necessary to establish special measures for sub-suppliers quality assurance, quality system continuously monitored, providing feedback information.

Projects quality improvements are typically conducted with substantially fewer resources, potentially influencing data quality.

Data quality control methods should be applied throughout all phases of project quality improvements. In the design phase, project aims should guide data collection decisions, emphasizing quality (rather than quantity) of data and considering resource limitations. In the data collection phase, standardized data collection forms, comprehensive staff training and a well-designed database can help maximize the quality of the data. Clearly defined data elements, quality assurance reviews of both collection and entry and system-based controls reduce the likelihood of error. In the data management phase, missing data should be quickly identified and corrected with system - based controls to minimize the missing data. Finally, in the data analysis phase, appropriate statistical methods and sensitivity analysis aid in managing and understanding the effects of missing data and outliers, in addressing potential confounders and in conveying the precision of results.

4 Conclusions

In essence, project quality management plans to close certain requirements of quality management in general, to be compatible with the family of ISO 9000, ISO 9001, ISO 9004, ISO 19011.

Quality improvement initiatives undertaken by the performing organization, such as TQM and Six Sigma, can improve the quality of the project's management as well as the quality of the project's product.

It is important to understand the technical and project management processes, but without the knowledge of when and how to apply them, the skills are useless. It is therefore of a paramount importance for an organization to have its managers well trained, in both developing and using the appropriate project management skills and corresponding tools, as a first step to creating the required "project culture" within.

Data quality control is essential to ensure the integrity of results from quality improvements projects. Feasible methods are available and important to help ensure that stakeholder's decisions are based on accurate data.

References:

[1]D. Lock, *Project Management*, Published by Gower Press, 2006

[2]A. Nedelcu, D. Dumitraşcu, Some Aspects Regarding Quality Management in Industrial Projects, *7th WSEAS International Conference on ENGINEERING EDUCATION (EDUCATION '10)*, Corfu Island, Greece, July 22-24, 2010, ISSN: 1792-426X, ISBN: 978-960-474-202-8, pp. 263-266

[3]Dumitraşcu A.-E., Nedelcu Ş., Lepădătescu B. – Project Cost Estimation of the Quality Management System Implementation, *7th WSEAS International Conference on ENGINEERING EDUCATION (EDUCATION '10)*, July 22-24, Corfu Island, Greece, 2010, Proceeding ISI – ISSN 1792-426X, ISBN 978-960-474-202-8, pp. 267-270

[4]E.M. Goldratt, *Theory of Constraints,* North River Press Publishing Corporation. 1999

[5]H. Kerzner, *Project Management - A Systems Approach to Planning, Scheduling, and Controlling*, Published by John Wiley & Sons, 2007

[6]J.M. Juran, *Quality Planning and Analysis*, New York: McGraw-Hill, 1970

[7]R. Max Wideman, *Project Quality Management*, Project Management Consulting, AEW Services, October 2002, available from www. maxwideman.com

[8]S. Wallace, *The ePMbook*, Available from: http://www.epmbook.com/, Accessed: 1999 – 2007

[9]T.C. Powell, Total Quality Management into the Projects. *Strategic Management Journal*, Vol. 16, No. 1, pp. 15-37, John Wiley & Sons, 1995

[10]*A Guide to the Project Management (PMBOK Guide). Body of Knowledge*. Project Management Institute Standards Committee, Newtown Square, Third Edition, American National StandardAvailable from: http://www.pwcglobal.com/

[11]*Project Management for Development Organizations - A methodology to manage development projects for international humanitarian assistance and relief organizations,* 2008, available from www.pm4dev.com