

1993 SAVE PROCEEDINGS

VA, AGENT FOR PROCESS CHANGE

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ABSTRACT

Many people have leaped onto the Total Quality Management bandwagon trying to alter Value Analysis (VA) to be more in tune with the quality effort. This paper will show that VA is a quality oriented program and that it can be used as the best agent for continuous process/function improvement.

- 1) Quality Control,
- 2) Quality Assurance,
- 3) VE,
- 4) Quality Improvement, and
- 5) Post Construction Review of Transportation Facilities.

It is the fifth program that this paper addresses, how VA is used to provide for continuous process improvement.

INTRODUCTION

Total Quality Management (TQM) has been difficult to define in terms of a fixed systematic process. After reading many TQM articles and visiting several companies that claimed success with TQM, it became apparent that it can be interpreted differently by different organizations. Implementing TQM concepts into a governmental agency has brought forth an even more distinct process than might be found in private industry. The major focus of TQM at the Florida Department of Transportation (FDOT) has been identifying customers, both internal and external, and establishing the means to continuously improve products and processes.

FDOT has been involved with quality management programs since 1971. That year, a Quality Assessment System was developed. This system was based on a process of the FDOT's internal customers evaluating the product received by them. It involved a heavy coding and data file effort with the output being made available to managers. There were no requirements for follow-up and/or implementation of good ideas. The system failed due to lack of interest and enforcement. The same process with minor modifications was attempted again in 1978. Again, the system failed for the same reasons.

The concept of Post Construction Reviews of Transportation facilities began in October, 1990 and was more in line with a quality assurance approach than that of a process review. The FDOT began post construction reviews as a result of inquiries by the State Legislature and State Transportation Commission, an advisory body. The questions presented were. First, Does the FDOT ever look at it's finished product to see if it had accomplished the project objectives and secondly, to identify ways to improve on the product the Department delivers? During 1992, Central Office VE assumed responsibility for the program. The procedure was updated to provide assurance that FDOT multi-disciplinary teams regularly observe samples of completed projects and, through an organized approach, systematically develop methods to ensure continuous improvement of projects by improving the processes by which they are developed

A general explanation has been used in the FDOT to distinguish the difference between Quality Management and VA (VA). The Quality Management approach requires the identification of problems and the development of problem statements. In contrast, problems and problem statements are not necessary when evaluating products or processes through VA. The identification of basic functions of a process is the foundation that allows the development of alternative methods to accomplish the required function. By simply applying the systematic process of the VA job plan, improved processes can be developed. The job plan approach can be repeated as often as new or alternative methods are desired.

The Total Quality Management process the FDOT is pursuing might remind you of the Travelers Insurance Company, the one with the red umbrella of benefits. FDOT's quality management system consists of five programs that fall under the umbrella of Total Quality Management. The five are:

PROCEDURE

The procedure basically comprises seven major elements. They are:

1. Project Selection
2. Team Structure
3. Project Review Process (Job Plan)
4. Reporting
5. Trend Analysis
6. Process Improvement Request
7. Process Review Procedure

PROJECT SELECTION

A sampling of constructed projects is selected each year for a formal team review. The selection is based on dollar amounts in the following three categories:

1. One hundred percent of projects with construction costs of \$25 million or more.
2. Fifty percent of projects with construction costs of \$10 million to \$25 million.
3. Ten percent of projects with construction costs of \$10 million or less.

TEAM STRUCTURE

Multi-disciplinary teams perform the project review. Each team is made up of representatives of each of the functional areas involved in the project development and operation. Team leaders are selected based on their prior training in VE and Quality Management.

PROJECT REVIEW PROCESS

The focus of this review is the operational characteristics prevailing at the time of the review and the evaluation of the performance of completed projects relative to the intended objectives to be achieved within the specific functional areas. The process to be used (job plan) is:

1. Identify project objective/scope/purpose.
2. Conduct field review.
3. Determine required functions and evaluate project compliance. Examples are:
 - a. Improve level of service,
 - b. Improve drainage,
 - c. Provide access,
 - d. Eliminate congestion,
 - e. Establish route continuity,
 - f. Eliminate hazardous condition, and
 - g. Mitigate environmental impact.
4. Investigate the positive/exceptional elements of the

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project.

- a. What was done right?
 - b. Can this be replicated to other projects?
 - c. Can the FDOT improve the exceptional features still further? How?
5. Identify improvement opportunity areas.
 6. Analyze improvement opportunity areas to specifically define the task, function, process or product that should be evaluated.
 7. Develop lessons learned and evaluate team results to determine, to a reasonable degree, if the project objectives were met by the delivered product.

REPORTING

Reporting is kept to a minimum to reduce paperwork. The five categories required to be addressed are:

1. Project Identification
2. Review Participants
3. Exceptional Areas
4. Improvement Opportunities
5. Recommended Action/Tasks

TREND ANALYSIS

When a District team conducts Post Construction Reviews, three types of problems or improvement areas will generally be identified.

They may be project specific, district specific, or have statewide significance. Florida DOT's organization consists of eight major districts operating in a decentralized manner. As such, all operational functions are under the authority of district management. The development of design standards, rules, procedures and other operating criteria is the responsibility of the Central Office. Therefore, the need exists to define authority for follow-up action.

Trends and patterns are monitored through a data base to determine when a process should be reviewed. It must be understood that each product produced by the FDOT is unique. There are no two projects which are exactly alike, or even require the use of the same processes to produce the desired results. Repetition does occur in developing plans and specifications for transportation projects. However, the repetition is in the use of processes by project managers and designers and not in the products themselves.

The Districts are given the responsibility to identify processes that should be evaluated for improvement and to determine if these are District specific or of statewide significance. Although the Districts have processes for operational functions, the primary concern, at the Central Office level, is insuring that systems are in place to provide for continuous review and updating of these statewide controlling processes.

After several post construction reviews, a District may justify the need for a process review by documenting a pattern of non-compliance or difficulty with a particular procedure or design standard. The District may submit a Process Review Request to Central Office VE. In addition to the identity of the submitting District and a specific contact person, the following information is provided:

1. Identify specifically, the task, function, process, or product to be reviewed.
2. Describe how the task, function, process, or product is currently accomplished.
3. Clearly state the need for change/improvement.
4. How can the task, function, process, or product be improved?

PROCESS REVIEW PROCEDURE

The Central Office VE section has the responsibility to coordinate all process reviews at the state level. Review assignments are made to the manager of the functional office

most impacted by the process. Although emphasis is placed on a short turn around for deciding what action is necessary, greater emphasis is placed on the use of a systematic approach to the process review. Each review follows an eight step action plan. The plan is:

1. Identify the scope/purpose/intent of the area of review.
2. Define the need for change/improvement.
3. Outline the necessary steps/elements and associated basic functions required to achieve to desired results.
4. Develop all alternatives that satisfy the stated need.
5. Evaluate all alternatives.
6. Prepare recommendations.
7. Coordination presentation with VE.
8. Present to Process Review Panel.

PROCESS REVIEW PANEL

A Process Review Panel has been established that consists of three Directors, making it a high level manager group. This body serves as the clearinghouse to insure that appropriate and thorough reviews have been conducted. In addition, once they have concluded that the team has made suitable recommendations for improvement, an implementation schedule is established with a responsible manager assigned the task of effecting the recommended changes. The implementation schedule is then monitored by VE with periodic reports to management to insure timely completions of assignments.

SUMMARY

Florida DOT, with the implementation of Post Construction Reviews of Transportation Facilities, has put in place a Total Quality Management plan that should guarantee quality products and services. More importantly, all the elements necessary to provide for the means to continuously improve the products, services and their delivery is in place.

The utilization of the function identification approach of VA will serve as the key element to provide for infinite evaluations to constantly provide the highest quality services to our ultimate customer, the traveling public. It is through these processes that VA becomes truly the best agent for process change.

REFERENCES

1. Sperling, Roger B., "A Project Performance Review Based on the VE Job Plan", *Value World*, July/Aug./Sept. 1992, p. 19-21.