

APPLICATION OF VE IN NON-MANUFACTURING AREAS

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Mr. Jagannathan started the VE Department in Tata Steel and has saved the company over US \$ 40 Million in the last 7 years through VE. For well over 20 years he has applied VE and has accomplished substantial savings to his company. He is the Founder Member of Indian VE Society and is a National Council Member & past Secretary General of INVEST.

He was awarded SAVE's "Distinguished Service Award" in 1993 and he is the recipient of the Indian National Award for the "Best VE Effort in 1983-84". He has published a number of articles and papers in leading journals in India and abroad on VE and Management and is the author of *Getting More At Less Cost - The VE Way* published by M/s Tata McGraw- Hill Ltd.

ABSTRACT

The application of Value Engineering (VE) has been widely accepted in manufacturing areas such as product design, development, manufacturing, packaging etc. Though success in manufacturing have been well documented and results are very encouraging, companies are reluctant to look at VE as a tool for Cost Improvement in the soft areas such as systems, Management Practices and Procedures. This paper highlights how a systematic and organised functional approach can establish VE in new areas and reap full benefits.

INTRODUCTION

During the last 24 years of my association with VE applications in several industries in India, I have found that organisations are interested and are looking forward to applying VE in the manufacturing/operations of the company. This includes product design, development, production and delivery. While it is true that manufacturing costs in India, on an average, work out to approximately 50 to 70 % (including material costs), the management practices actually dictate a large amount of hidden costs that needs to be looked into. I have tried to question some of the management practices with the

help of VE and I am pleased to share some of my experiences here. Identifying the basic function and then seeking creative solutions to achieve the same, almost guarantees 100% success. Here are two case studies which illustrate my point.

Case Study No.1: (Quality Management)

A large automotive industry in India has a foreign collaboration with a European automotive giant and is manufacturing world class commercial vehicles. When it started manufacturing approximately 45 years before, there were hardly any automotive ancillary units in India. Therefore it had to depend heavily on its own resources for manufacturing even items which were traditionally bought elsewhere in the world. However, with great persistence and with government support, Small Scale Industrial Development Authority was formed by the State Government just at the outskirts of the city and entrepreneurs were encouraged to set up industries to manufacture automobile components and assemblies for the parent company. Over the years, hundreds of units have been supplied and the traditional quality control system was established wherein parts coming from the vendors were inspected at the incoming stores on a sampling basis before forwarding them to the assembly line. The cost of rejection was very high since rejections at the primary inspection stage was around 13%. Since it was the suppliers' parts which were being rejected, the parent company's QC department thought that they were doing a fine job

since they could detect 13% defectives !

Times changed and the management of this automobile giant was keen on VE and I had the opportunity to apply VE on the Quality Management practice of this company. The team had the QC Chief as the team leader and went into the details and tried to identify the basic functions. The VE team had a few suppliers as well. After considerable deliberations it was concluded that "Ensure Supplies" and "Minimise Total Cost" were the two basic functions to be achieved. A FAST diagram for the same was drawn as shown in Figure 1.

This led to a series of new solutions. It was obvious that several functions which were required and necessary to achieve the basic functions were missing in the previous system like "Calibrate Gauges" & "Inspect Process" rather than Inspect Finished Parts. The parent company immediately decided to start a Gauge Inspection Cell in the industrial complex wherein calibration facilities from the parent company were shifted to provide ready help to the entrepreneurs. It was an extension of the quality set up of the parent company in the industrial area.

The small scale entrepreneurs were encouraged to bring their stage inspection gauges for calibration to the Gauge Inspection Cell periodically as per time schedules given by the Gauge Inspection Cell. Since personnel were available at the inspection cell, that operated for four hours a day, twice a week, in the remaining four hours of the day, they visited the vendor's site and checked the finished product at the site itself. This helped to establish the procedures for systematic Quality Assurance. They also provided training to the vendor's workmen to carry out inspection.

The net result at the end of the year was that the rejections had come down from 13% to 1% at the primary inspection stage. As a further step to improve the quality practice, some of the quality conscious entrepreneurs were encouraged towards Self Certification and this reduced the effort in inspection time as well as rejections. Final results were (i) easy availability of quality supplies, (ii) reduced inventories and (iii) less manpower in the inspection department of the parent company.

The functional approach led to savings in millions of dollars on a recurring basis since almost 60% of the parts were bought from outside and the new system was extended to all supplies.

Case Study No.2 : Hospital Gate Pass

A hospital attached to a fully integrated steel plant of 3.0 million ton capacity had a peculiar problem. It had a capacity of 800 beds for patients and was serving about 5,00,000 patients per year. While the hospital was best known for the quality of clinical treatment it rendered, it still left many people in the community unhappy because of poor services such as the system of issuing Gate Passes to the patients' relatives who visited the hospital. In India it is a social custom to visit relatives and friends who are in hospital and no amount of controls could prevent or stop this practice. The Director, Medical Services called for a study of the Gate Pass issuing procedure and formed a VE team to improve the system.

Old practice : When a patient is admitted to the hospital they are given an Admission Card which is forwarded to the concerned ward along with the patient. The visitors were permitted against a gate pass which was being issued separately by two Security Officers per shift, on a daily basis. At any time there were at least 30 to 40 visitors queuing up at the Security Officers' counter to obtain a gate pass. Many times, due to heavy rush, there were heated arguments between the security and the visitors leading to total unpleasantness.

New practice : The team identified the basic function as, "Authorise Entry". See FAST diagramme in Figure 2..

They argued that if patients could be admitted from the Admissions' Counter by a clerk why should "Authorise Entry" function be performed by security personnel separately. New ideas generated helped in simplifying the entire process. At the time of Admissions, the Admission Card, which was a computer print out on a special pre-formatted stationery, was modified to include 2 gate passes that could also be issued along with the Admission Card. The Gate Pass was valid as long as the patient was in the hospital; and had to be surrendered at the time of patient's discharge. This automatically eliminated the issue of daily gate passes and also restricted admissions of visitors to only 2 persons.

The system was implemented without any difficulty with full satisfaction to one and all and eliminated two Security Officers completely!

In my current assignment, more than 600 VE projects have been initiated and almost 350 projects

have been completed. The application of VE in non-manufacturing areas have given excellent results. Almost 15% of the projects have been in non-manufacturing areas such as health care, town administration, educational facilities, illumination of buildings etc. Motivating the departmental heads in

these areas and persuading them to look at their problems from a functional approach by cross-functional teams following a systematic VE approach has given savings in the order of 2 million dollars to the steel company in addition to improving the systems and procedures.

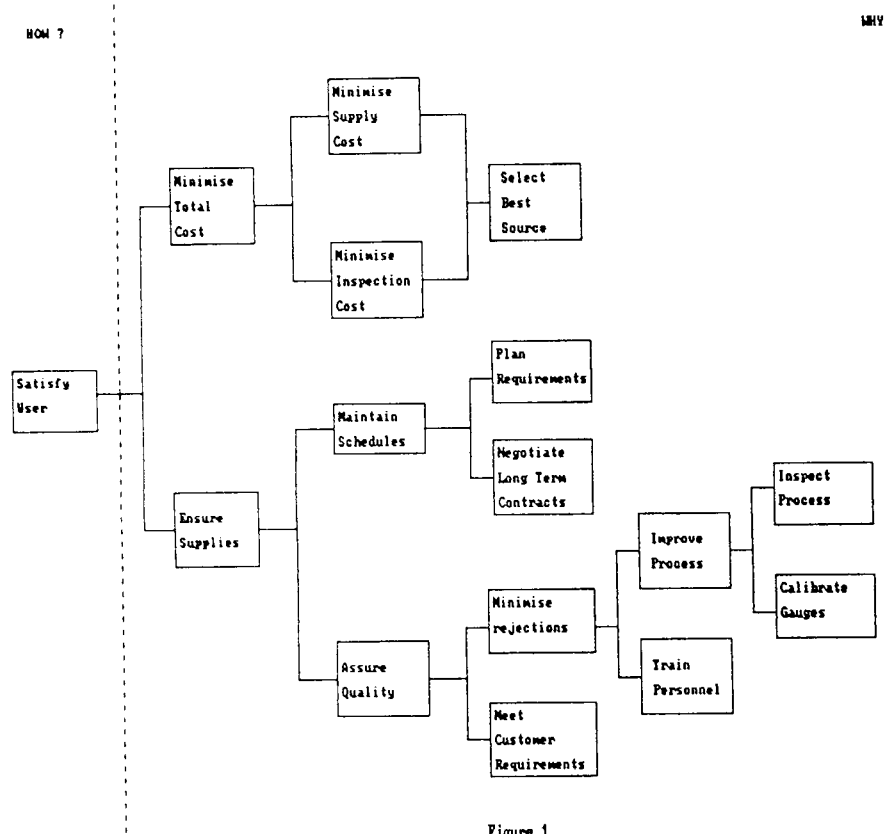


Figure 1

FAST on Quality Management Practice

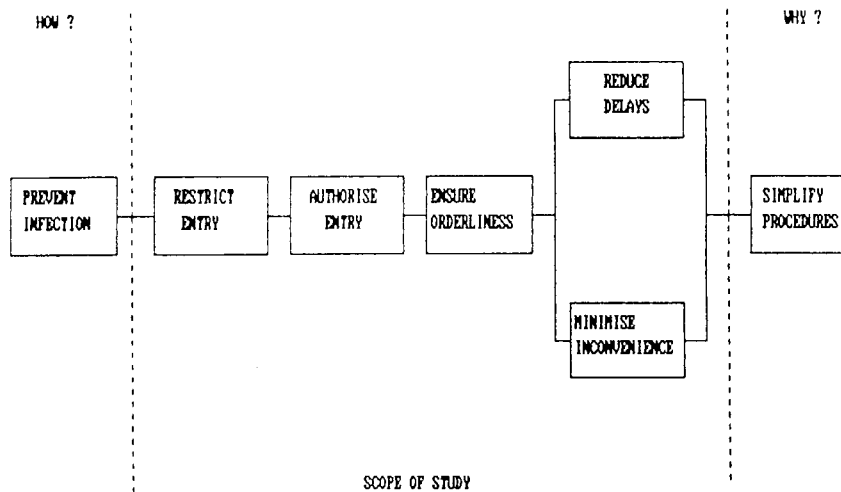


FIGURE 2 FAST ON HOSPITAL GATE PASS