Communication

QUALITY AS SYSTEMS OF A PHOTOCOPYING SYSTEM MANUFACTURING COMPANY

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Introduction

The product or service quality is centered on customer satisfaction. Process quality is required to assist the customer well. The quality of the process is needed irrespective of the product and it depends upon number of variables. The process quality improvement seeks in the company as a whole. The results are expected to reach throughout the organisation, with reduction in losses, improvement in productivity, etc.

In the case of manufacturing industry, several important factors need to be considered in the production cycle such as facilities, equipments, employees, rejected materials and environment.

Quality Control (QC) and Good Manufacturing Practices (GMPs) are the usual ways to reach to this goal. The first consists of testing the ingredients and processes by inspecting some finished products. GMPs are generic groups of principles and rules for correct handling of operations. The industries in India, in general, do not have human or financial resources to adopt more sophisticated technologies to obtain solutions to problems. The objective of this paper is to use the Problem Analysis & Solution Methodology (PASM), a sequence of procedures, to identify the fundamental causes of the process problems present in a manufacturing company of photostat (copier machines) and recommend solutions to those problems.

Methodology

Problem Analysis and Solution Methodology: There are many tools and methods that can be used to decrease the difference between the customers' needs and the process performance. The quality control tools are graphic, numeric or analytic procedures. The traditional ones are: *Cause and effect diagram, histogram, checklist, Pareto chart, flow diagram*, etc. The quality control tools are appropriate to use in the initial stages of a project.

Kimbler & Ferrel (1977) for the analysis of management activities used Plan-Do-Check-Actia (PDCA) cycle as a part of PAS Methdology. The same model has been followed to analysis the present case.

Practical application: Total quality of Chennai Xerox (CX) is all about contained in its "duplication" effort. Like the machines that it manufactures, the company's functioning is completely focused on copying – its own practices over and over again. For, CX believes in systems, when it comes to managing its businesses. Say chairman and president. "Quality is the way the company operates. The idea is to make everybody work in the same direction."

Chennai Xerox (CX's) quality initiative consists of breaking down each and every function like manufacturing, materials, quality etc. into distinct processes. Each of them is a sequence of explicit, unambiguous step detailing what is to be done, when it is to be done and how it is to be done. This eliminates the possibility of individual variations to the minimum. *CX's reasoning is that brilliance may come from innovation, but consistency can be produced only by design – if it is not to be left to chance.*

The General manager (Quality Assurance), CX, opines that "Systems are something that stay behind and can be used irrespective of who comes and who goes." CX's quality philosophy is, therefore, the knowledge of the individuals it employs must be translated into formal, codified structures, creating systems that can be followed to achieve the same effect without dependence on the personal expertise of individuals, who will, after all, enter and exit the company. The experience of CX in process mapping and improvement has been quite good.

Each process at CX is not only specific but is also documented to finer details. For instance, every time an employee makes a suggestion, it goes through 31 clearly laid-out steps, including translation into action and a reward for the concerned employee. Virtually each time that a worker completes a new function, he or she is required to note down all that went into it so as to augment the collective wisdom within CX. And thereby, improve the way work is done. The General Manager (Engineering and Technical Support) of CX agrees that it is the system that gives the ability to be right the first time.

The executives feel that they are responsible for not just product quality, but business quality until it becomes a habit. It has to depend on documentation. Contrary to expectations, the result isn't a bulwark of bureaucracy. For, to ensure that the quality level of its systems approach is maintained, CX has restructured itself from the traditional pyramid to a tree.

The previous system was put forth by the CEO who laid down the standards while the processes were flexible. The newer system was designed to wrap the company around inflexible processes, with customers defining the standards and the process-owners acting as the roots of the tree, supplying resources to ensure that the output of the processes conforms to customer specifications. Says the Delhi-based quality consultant "The degree of success was designed to depend on the systems. The systems being not too bureaucratic, it was expected to really work."

Like its other functions, CX's quality improvement practices themselves are designed around the systems approach. Every customer complaint is to go through exactly the same cycle every time, culminating in a solution to the problem that it refers to. Consider, for instance, the method used to solve a typical problem like sudden stoppages of CX's copiers for no apparent reason. It came to light when these breakdowns identified as a customer dissatisfaction phenomenon by a market survey. This is one typical example of the company's routine method for identifying such factors.

Following the systems laid down for treating such a complaint, the problem was takenup by the team responsible for central corrective action and handed over for a solution to a cross-functional team-facilitated by, deputy manager (failure analysis) - comprising representatives from the technical support, engineering, shopfloor and sales departments. Using a step-by-step problem-solving process-with each step clearly codified in the process map-the problem was validated and a root cause analysis generated.

In this case, it turned out to be the corruption of the random access memory code - (which coordinates the optical systems of the copier) following a sudden surge of power. Then, the teams pressed the Five way system - (asking why to every answer thrown up in order to probe deeper) - into services to track down the contributing causes of the problem and generate a solution. After implementation, it was evaluated through 90-day surveys.

A very strong insistence on systems is required when it comes to processes like manufacturing, after-sales service or even addressing customer complaints. The uniqueness of CX's quality-through systems philosophy is evident in the success with which it uses the approach to govern what are considered to be subjective functions like advertising and marketing communications etc.

Thus, the process of selecting an advertising agency is mapped out through flowcharts, detailing-interalia-the points within the company from which inputs must originate for the creative and the strategic briefs, the checks that must be administered to ensure that the agency can deliver advertising of the required standard and the test that their work must be subjected to in order to verify that the requirements are being met.

Likewise, even the simple process of eliciting employees suggesting for improvements has been systematised by including in every work contract the stipulation that the employee must make at least 12 suggestions a year. Here, too, the company follows quality systems by bench-marking against other companies in copiers global market with the target now set at the 63 suggestions made by each of Fuji Xerox's employees in 1993.

To ensure that this systematic approach is followed scrupulously by all its employees, CX holds suitable training programmes for every worker. Chennai Xerox has been through it too-within 90 days of his joining the organisation. And audits of how well systems are being maintained, upgraded and followed are carried out annually by teams from US, UK etc on the basis of which Business Excellence Certificates are awarded.

That systems are the soul of the CX machine is obvious from the top managers' own commitment to them. The top management now feel that they didn't harness the full potential of individuals earlier. Now, an executive does not need to be supervised, he just needs to be supported. And the support, in the top management's opinion, must come from processes and procedures and not as commands from the top. CX has a strong conviction that it is practice that produces perfection.

CX's TQM quality philosophy: CX's TQM quality philosophy is that its quality is defined as meeting customer requirements, then, it covers everything. It is not only the quality of the product, but also costs and services. The major factor is the cost because the customer is very cost-conscious.

The four goals for the company are *customer satisfaction, employee satisfaction, marketshare* and *return on assets.* These goals are explained to all the people in company from the top to the worker. And they are achieved by using quality principles.

Chennai Xerox's quality practices: Chennai Xerox has analysed many company's structures and concluded that they are not uniform. CX is trying to be in line with the best structures that is a total quality model. It has the advantage of benchmarking with the market so that it can compare itself to other companies worldwide.

Chennai Xerox's quality imperative: As trade barriers go down, it has been realised that quality is going to be more and more necessary. Customers are becoming more knowledgeable. There are companies, which analyse only the products of their competitors. However companies following the quality path will certainly have an advantage. There is only the cost of changing over to quality practices. The earlier one gets into quality, the better it will be. If it has to be obtained ultimately, the questions why not try and get it now?

Best Practices culled from Chennai Xerox

✍ Break down every process into an unambiguous sequence of steps

✍ Document every process to create a manual for conformance

- ✍ Devise systems that can function even if the individuals change

- ✍ Keep the processes fixed and the organisational structure flexible

- ✍ Use global quality audits to benchmark efficacy of systems

References

Ando, Y (1994) <u>*How to improve your process using the QC story procedure,*</u> *Tokyo Ture Press.*

Kimbler, D.L., and Ferrel, W.G., (1997) <u>*TQM-1 Based Project Planning,*</u> *London, Chapman & Hall.*