
QUALITY ASSURANCE IN THE SECTOR OF SOFTWARE ENGINEERING

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ABSTRACT

The present write-up deals with the quality assurance aspects in the service sector. It suggests the implementation of SWOT analysis in the service sector to identify the factors affecting the sector. It further recommends adoption of Taguchi's philosophy in carrying out the analysis in order to improve the quality of service in the service sector.

1. INTRODUCTION

The concept of quality encompasses every sector of human activity. The concept of quality had been confined to the manufacturing sector till recently. Some of the definitions of quality given by experts in the field are the following:

- 1) Quality means fitness for use
- 2) Quality means meeting the specifications

It is only, of late, the concept of quality has been extended to cover the domain of the service sector. In modern times, the definition of quality has changed with the customer at the focal point. As a result, the definition of quality is that, "quality is customer's delight". It is no exaggeration if one claims that there is no area in the service sector wherein the concept of quality cannot be applied. To cite a few areas of the service sector, mention can be made of:

- 1) Administration
- 2) Banking
- 3) Catering
- 4) Communication
- 5) Education
- 6) Energy
- 7) Health care
- 8) Insurance

- 9) Postal
- 10) Tourism
- 11) Transportation etc.

Quality assurance in the service sector has gained a lot of importance in our country with the signing of the agreement framed by the World Trade Organization (WTO). In fact, our country is a founding member of WTO. It is not only a binding onus but a natural offer to our country to abide by the rules and regulations governing WTO. In a way, it is a blessing in disguise to our country at a time when the quality of various services offered in our country in different service sectors is deplorably poor. With the adoption of the policy of the global economy, it has become essential for our country to improve the quality offered in the service sector, in order to face stiff competition posed by others in the world market. In a way, global competition is a "bum-in test" in which, only the fittest would survive and poor quality services would "burn out". This would certainly result in an improvement in the quality of service offered in various sectors.

One of the most economical ways of improving the quality of service and offering it at low cost is, to bring down the cost of rework or scrap. The "bum-in test" would reduce the quantum of rework or scrap and thus would improve the quantum of rework or scrap and thus

would improve the quality of service offered. No extra amount has to be spent on advertisement of the service offered if its quality is high. Poor quality would result in great loss to a customer in more than one way. Moreover, the supplier who offers poor-quality service to a customer would not only lose the customer but a prospective advertiser. A dissatisfied customer would publicize the negative aspects of the supplier and in turn, the supplier would lose the market. Once the image of the supplier is tarnished, it would be very difficult to rebuild the same. What is said applicable not only to a supplier but also, to an organization or even, a nation? As such, a lot of care has to be taken at the very initial stage itself to ensure that the quality concept is built into the system at the design stage itself. This is precisely what Taguchi has advocated. Taguchi's philosophy, if implemented in all sincerity, would result in higher productivity and consequently, higher returns to the organization. As the proverb goes, "A stitch in time saves nine". Steps have to be taken at the initial stage to plug in the loop-holes prevailing in the system. This is possible through a detailed analysis of the system. Such a study is known as SWOT analysis. The details of the SWOT analysis are given in the following sections.

2. SWOT ANALYSIS

SWOT stands for:

- a. Strengths (S)
- b. Weaknesses (W)
- c. Opportunities (O)
- d. Threats (T),

In a competitive economy, a SWOT analysis is a must for an organization for its survival. The organization could belong to any sector of activity. The advantages resulting in carrying out a SWOT analysis are many. To start with, an organization knows where it stands in the market. Secondly, it helps the organization. By this, it could improve its performance, if it is below the international standard fixed for the service it is offering. If it is at par

with other competitors in the field, it could try to improve its performance so as to achieve an edge over its competitors to become a leader in the international market. In order to achieve such a status, the organization has to put in enormous efforts in almost every area of activity pertaining to the particular service sector. This is not an impossible task on cannot achieve. It is only through research and development (R&D), one could set new standards. The concept of quality is that it is an unending spiral. The more one tries to reach the target, the farther the target moves. This is essential for progress.

2.1 STRENGTHS

An organization should, at the beginning, list out its strengths, such as, its capability to offer service of international quality, delivery schedule, price etc. vis-a-vis its competitors. It is only when an organization has a proven edge over its competitors, it can claim as its strength. In a competitors environment, there is always a possibility of a competitors winning over other competitors. Thus, there is a need for a continuous evolution of the market condition. It is rightly said that, an early bird catches the worm. There is no room for sluggishness or apathy if, at all, one wishes to remain a leader in the market. An organization should lead others by allocating a part of its resources to R&D activities, market survey etc.; Most importantly, it should concentrate on human resources (H.R.) which, acts as the back-bone of the organization. Without the support of the proper human element in a system, it would not prosper. It is only through motivated, talented and dedicated human resource that an organization should treat any investment in R&D and H.R. sectors as long-term investments. A motivated and loyal worker in an organization is an invaluable asset of the organization. To conclude an organization should identify its strength in chosen sector of activity and improve them, whenever need arises.

2.2 WEAKNESSES

An organization should not fail to identify its latent weaknesses. In fact, it should welcome comments and criticisms emerging from its customers and take note of the drawbacks in the quality through a detailed analysis. This is essential for the survival of the organization. Many a time, an organization may not know its drawbacks and yet, it could enter the market with a feel in that it would be able to float in the market. This would result in the wiping out of the organization from the market, the customer would come to know of the ins and outs of the organization and would hesitate to transact with the organization. Having lost the market, the organization suffers a natural death. It is only when an organization faithfully tries to rectify its weaknesses; it could survive in the market. Sooner, the better for the organization for, no consumer would be waiting till the organization improves its performance. One again, the “bum-in-test” would exhibit the truth. One should rectify one’s weaknesses within the shortest possible time to survive and enjoy a place in a competitive market.

2.3 OPPORTUNITIES

An organization should survey the market conditions in detail, in order to find out new venues to start new ventures. Opportunities do not knock at one’s doors. One should try to encash an opportunity whenever one visualizes it. Even a sleek opportunity would turn out to be a profitable one. One should be wise enough to identify an opportunity in midst of odds. One should not brood over a lost opportunity. One should be optimistic in one’s life. If one door is closed, another is open, so that, one can enter. There should be no room for pessimism in one’s mind as, it would ruin one’s career. There should be a positive approach in one’s chosen field. Then and then only, one can march ahead and reach the goal. Positive attitude is one’s weakness. Whereas strength has to be increased, weakness should be curbed at its root level. Strength means both physical as well as mental strength. If the mind is weak, it tells on

the performance of the individual though, one might possess body strength. It is rightly said that, an opportunist feels a glass is half-full, a pessimist feels the glass is half-empty. A pessimist looks at an opportunity as full of obstacles and therefore, dreads to proceed further. An optimist thinks of every obstacle as a challenge one’s way to success. The more the challenges one faces, the greater the strength one acquires. It is only a person with a strong will who would succeed in life.

2.4 THREAT

One should visualize the possible threats before one ventures into one’s activity. The threats could be from the competitors operating in the market or, from within one’s own organization. Unless one has total control of the threats prevailing in one’s organization, it would be futile to venture into the market. This is analogous to “process control” in an industry. Unless the “within variability” is under control, one should not proceed to control the process. The “within variability” could be due to various factors. For example, the work-force within an organization might not be trained properly for a job. A non-motivated work-force could be detrimental to the organization itself. The reasons for such a situation should be identified and steps should be taken to rectify the situation. A work-force not trained to perform a specific job might bring down the image of the organization by offering poor-quality services. The threats from outside the organization could vary. Some could be due to technological factors. A few could be due to economic factors. Such threats should be studied in depth by adopting scientific methods. The implementation of the conclusion arrived at by such a scientific study could bring in improvement in the quality of the service in one’s chosen sector of activity.

3. CONCLUSION

To conclude, quality assurance in the service sector brings in as enormous increase in the productivity of an organization, be it in the manufacturing sector or, service sector. It enhances productivity and reduces rework and scrap to zero level. The concept of quality has to be nurtured from the very inception. It is rightly said a tiny plant if, mended properly at its early stage, would grow into a straight and gigantic tree. What is said of a plant is equally applicable to an individual or, and organization or even, to a nation.

It is rightly said that the economic prosperity of a nation mainly depends upon the quality of the goods it produces and the quality of services it offers. Added, such a nation commands respects from other nations. It can serve as a beacon light to other nations that would be trying to navigate their paths towards economic prosperity. A nation can grow prosperous if only, its resources are harnessed properly. Harnessing implies proper planning. Proper planning is the result of a scientific study of utilization of the available resources. Improper or, under-utilization of resources leads to low productivity. A nation with low productivity cannot dream of becoming a welfare state. Hence, no effort should be spared to utilize the resource a nation possesses, be it in the form of materials or manpower.

Every nation has its own problems and limitations. However, a rational approach towards these problems would enable the nation to adopt a policy that would enrich it. It is this juncture that the importance of a world economy has to be highlighted. The various nations of the world should unite to become members of a large family and share with others what they possess and receive, in turn, what other nations have to offer to them. The artificial walls that separate the nations today have to be dismantled to usher in a new world economy that flows freely among the nations of the world. WTO was established with this laudable objective in mind. However, it has yet not taken roots. It has a long way to go before its voice is heard. A day would come soon when a

world-government would be established that would bring in a uniform code of law to be adopted by every member nation of the world. That would put an end to all disputes that have been bothering the nations for several centuries. As Dr. Sir S. Radhakrishnan has said, "Man has learnt how to swim in the waters like a fish and has learnt how to fly in the sky like a bird but, he is yet to learn how to live like an ordinary human being" How true is his statement!