

“QUALITY”- A Major Characteristics of EDI

Abstract

Quality is a buzzword today. Many organizations are talking about quality. Are following footsteps of Japanese with whom quality is a way of life? Are more and more organizations really beginning to care about quality?

Most of us would say 'yes' to both the questions. In deed, we appear to be moving in the direction of quality.

Keywords : Organizations, Accelerator, Affordability, Functionality

Introduction

In simple terms, a quality product should be at least functional, i.e. it must do its intended job. A pen should write, a car should go well on roads and a medicine should cure the disease it is supposed to cure. In addition it should be convenient to use. For example, the clutch, the gear, the break, the accelerator etc. in a motorcycle/ scooter are easily operated with hands and legs. How will be it if, one has to bend and press the break with a hand and leg?. It will be inconvenient. Today we the number of products which are difficult or inconvenient to use, which is the reason for their poor sells. The keyboard of the pc is not very convenient input device which is why a lot of development is taking place in this area.

Next comes affordability. It may appear that affordability has nothing to do with quality, but in deed has a lot to do with quality. The more affordable a product, the more its sales and usage. The confidence the customer has in a company and its product is also part of quality, because perceptions are the quality. i.e. if people believe a product to be bad, its sales will be low irrespective of how good it may truly be.

In case of some products, there are well defined or accepted standards laid down by some regulatory body like ISI or ISO. The common man cannot judge whether it conforms to these standards or not, and may not even know anything about these standards, but once the supplier has the certification of the standard, the common man's interests are protected, whether he understands it or not. For instance, all electrical items must be safe to use for which, there are ISI standards. Safety is an important element of quality, irrespective of whether the customer asks for it or not.

Delivery of the product/Service on time is also a very important requirement of the quality. Service providing to the customer before, while, and after, sale service is very important, for quality, and future survival. When a customer plans to buy an engineering product where a customer is confused that can be operated confidently or not. Then in that case, company should provide service for the customer. This is known as before sale service.

Quality is collection of characteristics in a single product. If all the characteristics are found in a single product then we can say that product is a quality product. Otherwise that product will not be considered as quality product or service. The characteristics are as follows.

1. Functionality
2. Operate ability
3. Affordability
4. Safety
5. Affordability
6. Portability
7. Durability
8. Confidence
9. Services

Evolution of Quality

As civilization developed, customers' expectations and demands deep moving. Just a few years back, Quality was defined as "FITNESS FOR USE". Then people understood it as, "CONFORMANCE TO SPECIFICATIONS". Then we said quality is "CUSTOMER SATISFACTIONS". Now we say quality is, "CUSTOMER DELIGHT".



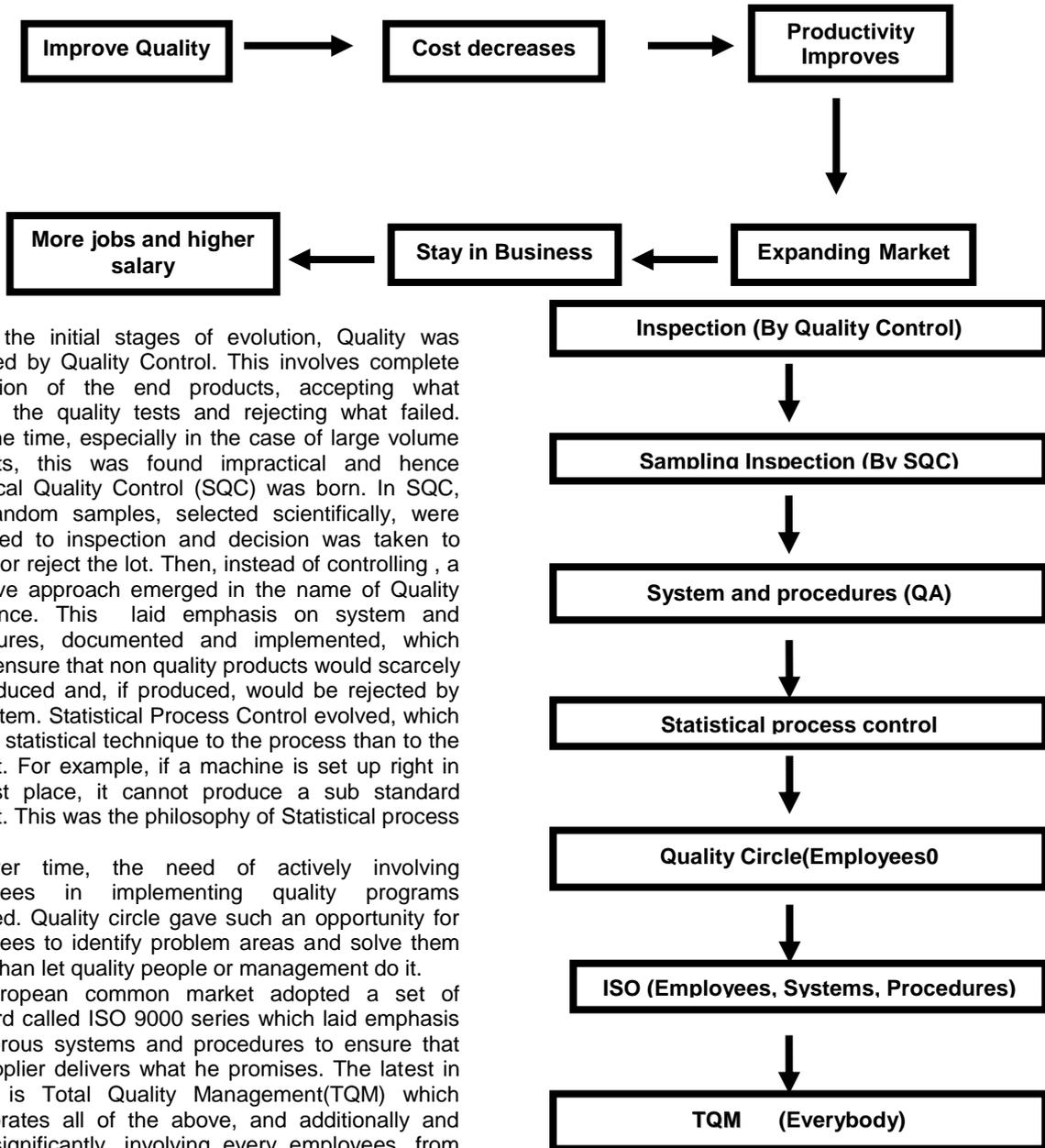
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That is, your product should be of such high quality that the customer should be extremely delightful to have it, if you want to call your product as quality product. At this rate, we do not know where we are heading.

In fact, Edward Deming, one of the Quality Guru, believes that quality will result in lower costs, higher profit and increased salary to all employees, besides leading to creating of more jobs.



In the initial stages of evolution, Quality was achieved by Quality Control. This involves complete inspection of the end products, accepting what passed the quality tests and rejecting what failed. Over the time, especially in the case of large volume products, this was found impractical and hence Statistical Quality Control (SQC) was born. In SQC, only random samples, selected scientifically, were subjected to inspection and decision was taken to accept or reject the lot. Then, instead of controlling, a proactive approach emerged in the name of Quality Assurance. This laid emphasis on system and procedures, documented and implemented, which would ensure that non quality products would scarcely be produced and, if produced, would be rejected by the system. Statistical Process Control evolved, which applies statistical technique to the process than to the product. For example, if a machine is set up right in the first place, it cannot produce a sub standard product. This was the philosophy of Statistical process control.

Over time, the need of actively involving employees in implementing quality programs emerged. Quality circle gave such an opportunity for employees to identify problem areas and solve them rather than let quality people or management do it.

European common market adopted a set of standard called ISO 9000 series which laid emphasis on rigorous systems and procedures to ensure that the supplier delivers what he promises. The latest in quality is Total Quality Management(TQM) which incorporates all of the above, and additionally and more significantly, involving every employees, from the Chief Executive Officer to the lowest level worker, in understanding the importance of the quality to the organization and to their own personal lives by better growth and salary. And making it committed movement of the people. Here people would produce quality not, Because they are asked to produce, but Because they like to produce.

Here is a simple illustration.

Anil Kumar has just got a new job. He is proud of his designation to Executive Quality. Doesn't sound good? It is Anil's first day in the office. He reports to the manager of quality, who briefs him on how the quality department functions. He is given few books to browse through to understand what quality is all about. He reads them, taking notes all day long. At the end of the day, as he gets ready to go home, his

manager stops at his desk and points finger at it. "This is not quality work, Anil, always keep your desk clean, it will help you in doing quality work", he tells him. This is Anil's first lesson in quality.

Keeping your workplace clean is only one aspect of quality, but it is an important aspect too. Quality comes from within, It reflected in every little act, every little act, every little gesture of yours. Quality is also an ongoing process, something you have to work on constantly. It takes a lot of effort at first but in time it becomes second nature, a habit like the morning coffee or newspaper.

"Is it really worth it?", we are sometimes tempted to ask, while setting up a quality program. Do the benefits outweigh the costs? Can't we take the easy route and do things reasonably well without worrying unduly about quality? The answer to the first question is big yes and to second one an equally big no.

Some Attitudes to Quality

1. Quality is not my business
2. Quality is expensive
3. Quality is craftsmanship
4. Quality is luxury of the privileged
5. Quality is exclusive
6. Quality is in short supply
7. Quality is an imperative strategic need

Quality is not my business

Well, we have a quality department, which has nothing better to do. I have got a production schedules to keep up, interpersonal problems to sort out. So who has the time for such fancy ideas? Quality is the business of the quality department, not mine.

The answer of above question is the quality begins at home. Unless every employees contributes to quality, the quality department can only keep rejecting.

Quality is expensive

If, I pay much attention to quality, I will produce less of the product at a higher cost. Well if, you do not care about the bottom line, I will give you quality.

The answer to the above question is that, do it right the first time and avoid the expense, trouble and time of redoing things. Quality is not expensive. It means more sales, better customer confidence, resulting in repeat customers and the spin-offs of a good reputation.

Quality is craftsmanship

Most of us think that the quality management is craftsmanship, and can be handled by only those people who are expert in that art. This is not true. Everybody can take part in this job and can help in the final quality product.

Quality is luxury of the privileged

Most of us think that, Quality is luxury of the privileged, which is not true. This is a wrong attitude of some of the people among us. This must be cleaned out from our mind.

Quality is exclusive

Quality does not mean that the product should be exclusive in its segment rather it conforms the perfectness. Other products of different companies might also be quality product.

Quality is in short supply

Producing, the product fast and making it available as fast as possible is against the definition of quality. We have to change our thought in this regard also.

Quality is an imperative strategic need

This was first true in a competitive environment and always will be. India has now become integration with the global economy. Only quality products and quality people will survive.

Imagine three wicket keepers fighting for a single place in a cricket team. Who has got the best chance of getting into the team? The best one, of course. The only time the wicket keeper can afford to relax, once he gets into the team, is when he knows he has no competitor and that is unlikely to happen.

Quality is an imperative strategic need, because in a competitive market, only quality product will sell in long run, not advertise hype, not attractive packaging, not free gifts and price discounts. People will find out sooner or later that there is a better product in the market than ours, unless we make ours the best.

Quality is an imperative strategic need and you can say it again,

Poor quality and related problems are caused by:

1. Poor vendors supplying poor quality raw materials and components
2. Use of obsolete or worn out plant and machinery
3. Poor industrial relations, therefore unhappy work force
4. Poor management lacking in vision

Statistical Quality Control

Statistical quality control is the use of carefully selected methods for improving product quality. It involves quick identification of any decline in quality during initial stage of production and taking immediate corrective action instead of identifying defectives after the damage has been done. One of the methods used for identifying defects is through sampling.

"Why sampling we may ask.". The answer is that, 100% inspection of products is very time consuming and expensive. And it has been scientifically proved that sampling almost always shows up defects as well as 100% inspection does. Doing it right the first time assumes great importance when it helps avoid 100% inspection.

In other words, SQC is a method to improve product quality, thereby limiting waste and rework. Naturally, production also increases.

As the term 'statistical' implies, the method involves the collection of numerical data which are tabulated and summarized using the prescribed statistical tools for the purpose of analyzing and reporting.

As seen earlier, statistical analysis is done for a small sample of the product instead of 100% inspection. This 'sample' or on which the statistical analysis is done reveals the quality or decline in the quality of the entire lot.

When statistical quality control is done on a scientific basis with careful sampling, then SQC helps in arriving at inferences of a similar nature of high validity within limited time and cost. Specific tools, graphs and charts are used for drawing relevant inferences from a sample population.

Acceptance Sampling

Acceptance sampling is the process of evaluating a small sample of the product in a given lot for the purpose of accepting or rejecting the lots, based on the conformance or non- conformance of the sample to quality specifications. It has a scientific (statistical) basis.

Acceptance quality level (AQL) is the minimum quality level that is considered satisfactory for

acceptance. AQL is the maximum percent defective (or number of defectives per 100 units) that can be accepted. The probability of acceptance of the lot is high.

Example

Let us see how acceptance sampling is applied. Consider the table shown below:

Analysis for arriving at sample size and acceptance no.

Material Code	Material Title	Normal Inspection Criteria AQL=6.5 (defect count per 100)		
		Lot size	Sample size	Acpt. No.
48 U 2321	SS pipe 75 mm	501 to 1200	80	10
47 u 2540	Ss rod 40 mm	151 to 280	32	5
73 v 4041	Drill spindle	51 to 90	13	2
86 v 1201	Drill clamp	9 to 15	3	0
76 v 8506	Drill 35 mm	26 to 50	8	1
88 v 8878	Drill 30 mm	3201 to 1000	200	21
92 w 5055	Rubber hose	91 to 150	20	3
93 w 7061	Gear stud	26 to 50	8	1

Explanation for table 1

As we can see, the AQL level as prefixed by the company is shown as 6.5 percent (defect count on per 100 units). Given the material code and the lot size, it will be possible to arrive at the sample size and the acceptance number. Here, AQL=6.5%. The parts for the first item in the table, i.e. for material code 48 u 2321, is brought in lots of sizes ranging from 501 to 1200. Now, we have to look into the "Sample size code letter" table (ABC standards).

Under normal inspection (Level II), we have the letter J against our lot size. Next, if we refer to the "Master table for normal inspection", for the letter J, we will notice the sample size mentioned as 80.

Now, for AQL = 6.5 %, scanning through the table, we will find that the acceptance level is given as 10 and the rejection level is 11. This means, the entire lot may be accepted if 10 or fewer defective parts are found and must be rejected if 11 or more defect are found. The computer can be effectively used when such tables are to be used, thus saving a lot of scanning or searching. It can automatically arrive at the sample size and the acceptance numbers given a material code.

From the single database given above, it is easy to find the sample size and acceptance number for a given lot size and material code.

Quality Circle

Quality circle consist of groups of three to twelve people, belonging to the same work area who do the same or similar work, who meet voluntarily and regularly to identify, analyze, discuss and solve work related problems. The circle presents solution to the management and it is usually involved in implementing, and later monitoring them. It helps the member of the circle to understand their job better, builds better human relations and develop leadership qualities. Ideally the purpose is not performing specific task, but to solve quality, cost and delivery problems. QC members are given training in solving problems techniques, in presentation skills and in any other relevant area required. They enjoy recognition of their work, by being allowed to implement their

recommendations and by management acknowledging their success.

QC members are given necessary training in the use of the seven QC tools in order to function effectively. These tools are

1. Check Sheet
2. Pareto Analysis
3. Cause and effect analysis
4. Histograms
5. Graph and control charts
6. Stratification
7. Scatter diagram.

According to Juran, A well known quality guru, the ten steps of quality imporvement are:

1. Build awareness of the need and opportunity for improvement
2. Set goals for improvement.
3. Organize so as to reach the goals
4. Providing training
5. Carry out projects to solve problems.
6. Report progress
7. Give recognition
8. Communicate results
9. Keep score
10. Keep score of improvements in terms of the impact of the result.

Conclusion

It is the primary responsibility of the management to imbibe the quality culture in every member of the organization, and in the suppliers.

The process of acquiring the quality culture may be slow and time consuming initially. As issues are resolved and people get used to working with each other towards improving quality, the goal of total quality organization can be achieved. Quality function offers a number of entry level opportunities for young graduates, particularly from the science stream, especially physics chemistry and statistics. QC inspectors, QC executives, Quality Assurance Executives are some of the quality related positions for which fresh graduates can aspire to step into.

So far the term 'Quality' is concern, it is having a collection of characteristics, needed in a product to

said as a quality product. Among the various common characteristics like functionality and usability, some other characteristics like affordability, reliability and suitability is also some important, rather very important requirement in the context of EDI. Because if a product is very good in its place and still we cant say that product as quality product if we don't have purchasing power or it we cant relay on them. Even if the product is very good functionally and if it doesn't suits our company because of literacy of employee then we cant say that product as quality product. Finally we can say that in the case of EDI, a special Quality assessment must be made before adopting it.

References

1. Doing Business through Internet, (E-Commerce) Electronic Communication for Business by S. Jaiswal. Publication: Galgotia.
2. E-Commerce- The cutting edge of business by Kamlesh K Bajaj and Debjani Nag Publication: Tata McGraw Hill
3. Realizing eBusiness with Components by Paul Allen Publisher: Addison-Wesley Publication
4. eBusiness Essentials, 2nd Edition by Mark Norris, Steve West, Publisher: John Wiley & Sons.
5. Electronic Commerce: The Second Wave, Fifth Edition by Gary Schneider, Publisher: Course Technology
6. Motorola University. "What is Six Sigma?" Motorola, Inc...
<http://www.motorola.com/content.jsp?globalObjec tId=3088> Retrieved 2008-07-20.
7. Quality is Everybody's Business by Patrick L Townsend and Joan E Gebhardt Publisher: CRC Press
8. On Track to Quality by James K. Todd, Publisher: CRC Press