

Service Quality: Measurement and Management

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Abstract: *Quality management represents everything an organization should ensure/accomplish in order to have products which will satisfy the clients' requests concerning quality and the requests of the existent regulations. The demanding customers and increased sense of customer satisfaction led to the use of the new service parameters making hoteliers to implement quality management as an effective aid. The empirical research in development of service quality theory suggests that improved service quality plays important role in overall customer satisfaction. Study would focus on various studies on Service Quality conducted by earlier researchers in an array of industries. The paper explores the development of service quality theory and alternate scales of measuring service quality, its role in customer satisfaction and importance*

Keywords: *quality management, principles, Software Quality Assurance, testing methodologies*

I. Introduction

Service is a patch up activity to fulfill some one's need in the market. Service is something, which can be experienced but cannot be touched or seen. Services offered by service providers cannot be seen & touched, as they are intangible activities. The basic difference between service & product is that services are intangible but products are tangible and are required to follow some standardized procedures. Service user can specify about that particular service satisfaction only after availing it for some period of time. Some of the common service areas are: Retailing, Transportation, Cell phones, Education, Health & hospitality Services, BPO and many more.

From the viewpoint of business administration, service quality is an achievement in customer service. It reflects at each service encounter. Customers form service expectations from past experiences, word of mouth and advertisement. In general, Customers compare perceived service with expected service in which if the former falls short of the latter the customers are disappointed.

Service quality(SQ) is a comparison of expectations (E) about a service with performance (P) $SQ=P-E$.

A business with high service quality will meet customer needs whilst remaining economically competitive. Improved service quality may increase economic competitiveness.

This aim may be achieved by understanding and improving operational processes; identifying problems quickly and systematically; establishing valid and reliable service performance and measuring customer satisfaction and other performance outcomes.

Objectives of the Study

- To understand the Quality management in services and measurement.
- To know testing methodologies in service Quality management

II. Research Methodology

The research is exploratory in nature. The details provided by the government of India is the primary source of this study. In addition to this it focuses on Literature review, News Papers, Journals, websites and the other reliable sources.

Service Quality Management: How to Measure and Manage It

Managing the quality of products and services is very important to ensure that the business excels in meeting the customer requirements and achieves organizational goals. Whether it's a manufacturing firm producing hardware or a software company providing services to clients, quality management is the very essence of continuous improvement and business growth. We can trace back the origins of modern quality management principles to Henry Ford's process and quality management practices that he used in the company's production lines. However, after the Second World War, it was Japan that emerged as the strongest proponent of Quality Management as they rebuilt their economy with the help of great statisticians and engineers like Shewhart, Deming and Juran. By combining quality control techniques and statistical process control methods, several quality management principles were formulated that are to this day used in industries across the world.

While product quality is measured through its ability to meet the user's requirement and the value of its features and characteristics, service quality is more of a comparison of the customer expectations and the service performance. Though the principles of improving product quality are applicable to services as well, it's very important to know the focus areas of improvement with respect to increasing customer satisfaction when it comes to service quality management. This can be done by measuring the gap between customers' expectations and how they perceive the services offered to them. The larger the gap size, the more improvements to be made.

What is Service Quality Management?

The process of managing the quality of services delivered to a customer according to his expectations is called Service Quality Management. It basically assesses how well a service has been given, so as to improve its quality in the future, identify problems and correct them to increase customer satisfaction. Service quality management encompasses the monitoring and maintenance of the varied services that are offered to customers by an organization.

Whether you are in the software business offering services to clients or operate in the food, hospitality or travel industry, service quality management is integral to managing customer expectations and business growth. The service quality can either relate to the service potential (qualifications of the persons offering service), service process (quickness, reliability etc.) or the service result (meeting customer expectations).

Dimensions of Service Quality

Measuring of service quality relies on the customer's perception and this could be different from the expected service. To determine the gap between services expected and perceived service, several models are used like the SERVQUAL model, RATER model, e-SERVICE QUALITY etc. The main dimensions of service quality determination are as follows:

- **Reliability** – This is the ability to perform the service dependably and accurately, as promised. In software service, it would be the correct technical functioning of the application and various features such as GUI features, billing, product information etc.
- **Responsiveness** – How quickly the services are rendered to the customer and the promptness of service delivery. With respect to software services, it would be the ability to respond to customer problems or give solutions.
- **Assurance** – This is a measure of the ability to convey trust to the customers and how well they extend the courtesy. Software assurance involves the amount of confidence the customer has in handling the software application or navigating a site, the belief he has on the information provided and its clarity, reputation etc.
- **Empathy** – Giving personalized attention, understanding the requirements and caring for the customers. The software service would include customized applications, one-to-one customer attention, security privacy and understanding customer preferences.
- **Tangibles** – The physical attributes like appearance, equipment, facilities etc. When we speak of software services, the tangibles would be aesthetics of the software application or website, navigation features, accessibility, flexibility etc.

Measuring Software Quality

Software quality measurement and assurance involves processes that check if the developed software meets the standardized specifications and works accurately. SQA (Software Quality Assurance) is an integral part of the complete software development life cycle and regularly measures the different attributes of the software before it's released. This way the businesses ensure that high-quality software services are delivered to the customer on-time. Quality control is achieved through software testing, verification and validation, and other processes to detect bugs or errors and fix them appropriately. Let us now look at some of the aspects of software testing, defect tracking and measurement for better understanding of software quality measurement.

Software testing is the process of evaluating the performance of the software by providing inputs and observing the outputs thereby ensuring that the application meets the technical, functional, user and business requirements as specified. Testing is part of the software development cycle and involves verification of the code, identifying defects or bugs and evaluating the different functionalities like usability, security, compatibility, performance and installation etc.

Testing Methodologies

Static Testing – The processes of reviewing, inspection, walkthroughs etc. wherein verification of the software takes place without actually running the code, is called static testing. Syntax, code structure, data flow etc. are checked and static analysis like mutation testing is also used to check for efficiency of the test cases.

Dynamic Testing – When the programs are executed with the help of test cases and software is validated, the process is called dynamic testing. This kind of testing is done even before the programming is complete so that sections of code are tested individually using tools like stubs or drivers and can be done manually or through automation.

White-Box Testing – The testing approach wherein the internal system of the application is tested thoroughly and is applied at the unit, functional and system level testing processes. It's effectively used to detect the maximum number of errors or bugs except the unimplemented sections or in case of missing requirements. The different techniques of white-box testing include:

- API Testing – application programming interface; public and private APIs are used to test the applications
- Code coverage – test cases are developed to cover a certain criteria of coverage
- Fault injection methods – faults are injected into the system to measure the efficiency of the testing strategy
- Mutation testing methods – new software tests are developed to measure the performance of the existing tests and involves modification of the source code in small ways to assess the test cases

Black-Box Testing – This involves testing of the software functionalities without going into the intricate details of the software code or system. The user-end features are tested and several scenarios are tested for user acceptance or integration etc.

Compatibility Testing – A software application doesn't serve the desired purpose if it's not compatible with other applications, operating systems or target environments. Compatibility testing ensures that these issues do not exist in the software developed.

Regression Testing – Software development involves a lot of change management due to changes in customer requirements and this sometimes causes errors in software that was previously working fine. Regression testing is very helpful to find bugs after a major code change has happened or to uncover old bugs that might have crawled in. The common method to conduct regression testing is to use old test cases and check if faults that were fixed earlier have re-occurred. Due to the enormity of the testing process in regression method, it's the most time-consuming of all testing methodologies and are often automated to reduce testing cycles.

Performance Testing – The performance of an application is tested to measure several attributes like usability, scalability, responsiveness, reliability, stability etc. The different kinds of performance testing are as follows:

- **Load Testing** – Here the performance of the software is tested when large numbers of users work on it at the same time or while handling huge volume of data etc.
- **Volume Testing** – Method to test software functions when the file sizes are increased
- **Stress Testing** – Used to measure software reliability when used for long periods of time or when exposed to heavy workload. It's also called as endurance testing.

III. Conclusion

The success of all organizations is based on the capacity to manage the clients' expectations, facilitating loyalty and investments (financial and otherwise). "Customer orientation" doesn't mean being only aware of your clients, it also refers to the actions that need to be taken in order to ensure they will continue to be your clients. Customer's service is also an essential component of customer orientation and is currently acknowledged as one of the most efficient ways to add value to products and services. In most cases, clients have many available options, so the decisive factor for them to come back or not is the received service. In many industries and sectors this also means is more likely for the customers to buy again from the same company or to come back to it in order to benefit from certain services, which will generate more profit. Based upon this service-quality model, researchers have identified the following five determinants of service quality, in order of importance: Reliability, Responsiveness, Assurance, Empathy and Tangibles.

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