

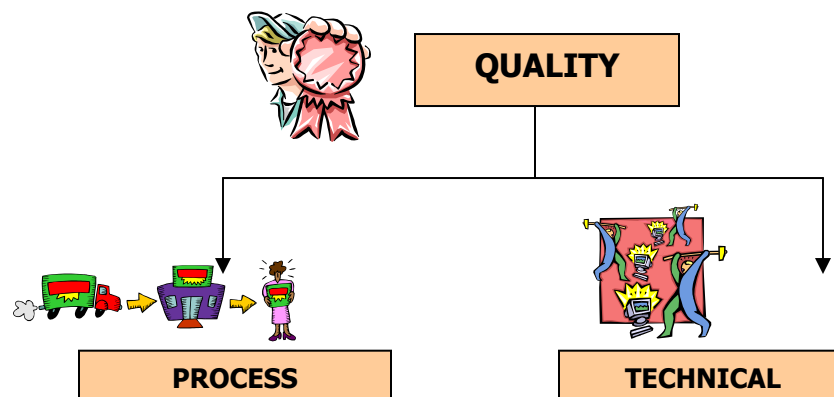
Determining Components of Service Quality

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Unlike manufacturing where engineering and manufacturing practices can be tailored to consistently ensure quality, services are intangible. Services are continuously delivered and consumed throughout the production process. The customer is part of the production process. Customers use many dimensions to evaluate service quality. A certification, such as a SEI CMM Level 4/5 certification may provide a transcendent view of quality. This is useful, as customers are required to evaluate even before they have consumed the service.

A service company can be evaluated for quality from two standpoints:

- Functional Quality – evaluates the process of service
- Technical Quality – evaluates the actual output of the service



FUNCTIONAL QUALITY:

A software service involves people, infrastructure and processes and these determine functional quality. Most service quality is user oriented, companies that invest in their process and in personnel quality initiatives are more likely invest in or conform to technical quality. While an enterprise going into a relationship will be able to judge technical quality into the relationship, functional quality can be assessed early on.

Some individual components of Functional Quality are:

QUALITY DIMENSION	FACTORS	EVALUATORS
PEOPLE	Competence	Assess Subject Matter expertise,
	Quality of proposals	Understanding of Requirement, Scope, Approach and proposed solution, Costs
	Courtesy	Respect for time, Respect for individuals
	Responsiveness	Promptness, ability to address all issues
	Reliability	Accuracy and dependability
	Access Credibility	Ease of contact, Approachability at various levels References – Positive and Negative Willingness to share negative references

QUALITY DIMENSION**FACTORS****EVALUATORS**

		Demonstrable corrections done
	Understanding of Customer/ Customer needs	Efforts made to know the customer Reflecting customers position rather than company's position
	Communication	What is the frequency of communications How easily can the parties talk to each other – locally / remotely. How easy is it to access people or information
	Personnel policies	Promotion policies, attrition management policies, exit interviews feedback implementation policies, training policies, employee stake holder policies, benefits, review process, peer reviews process, cultural orientation, rewarding mechanisms, employee and performance recognition mechanisms, Training processes, evaluating training needs
	Culture	What is the governance structure? Does it encourage people to speak out? Be heard? Express themselves? Make an impact on the working environment? Or is it structured along pure hierarchical norms?(Boss is always right)
INFRASTRUCTURE AND PROCESSES	Development Methodology/ Processes	Is there a documented process in place? Is there a Management commitment to enforce this process? Is there an independent group that evaluates and improves this process? Is there a process to BASELINE process performance? Are projects measured for performance and capability? Does the Company have standard tools in place to document, baseline and measure process performance? Does it maintain a history of its process assets and its project assets? Is it used for estimation and planning? Does the company have tools to manage the relationships?
	Investment in Tools	Productivity enhancement tools
	Appearance of Physical properties	A good work environment is essential for employee productivity
	Communications Infrastructure	Telephone, virtual, videoconference, data link infrastructure - reliability
	Security and Access	How are Intellectual and Physical property protected? What restrictions are enforced for access to hardware, servers, communication equipments, and facilities for employees and visitors?

QUALITY DIMENSION

FACTORS

EVALUATORS

Feedback processes	Customer Satisfaction Surveys, Customer contact personnel surveys and feedback process, Employee Satisfaction Surveys Feedback mechanisms,
Service Quality Audit Process	Process Analysts, Frequency of Audit, Documentation and dissemination of results, Addressing process gaps Tools to assess Process performance, Root cause Analysis and defect tracking and control mechanisms

TECHNICAL QUALITY

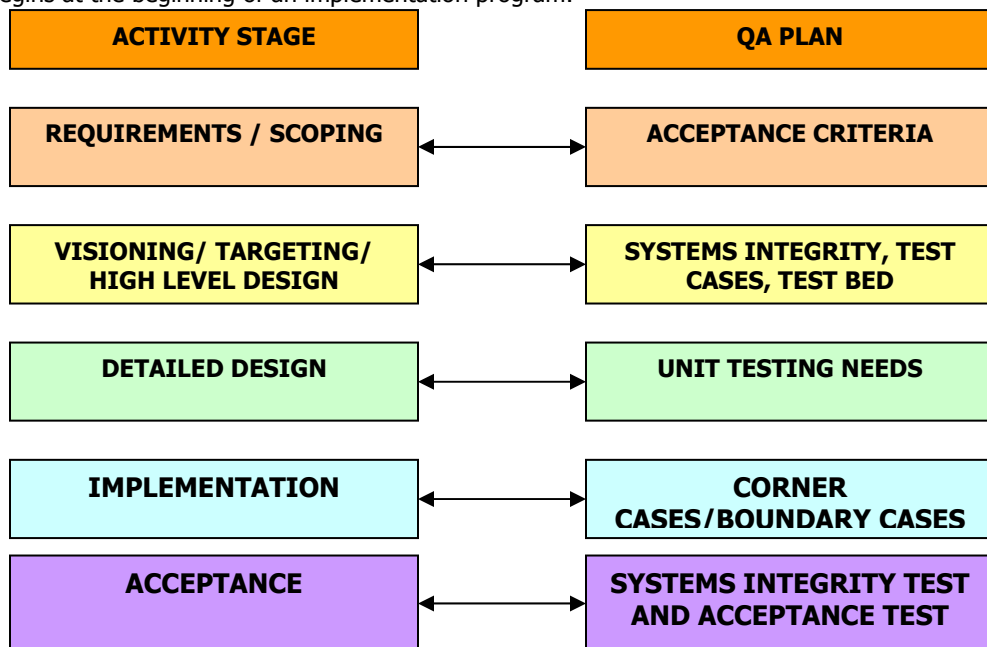
Technical quality is represented in the quality of the deliverable. A review of the implementation company can point to how it would perform technically. The definition of technical quality is driven by a manufacturing based approach which defines quality as conformance to internally set specifications. Software companies choose conformance to requirements to measure the Quality of a deliverable. This requires the companies to arrive at detailed understanding of requirements. A process that requires customer acceptance of High Level and Detail Design Documentation helps mitigate risks in the estimation of requirements. When teams are physically apart such gaps can undermine project success.

At the outset of an engagement the Company should be able to define the Acceptance Criteria. What constitutes the acceptance of a deliverable?

SOME ACCEPTANCE CRITERIA PARAMETERS

Feature set	Performance	Usability
Functionality	Availability	Manageability
Interface with other Applications	Scalability	Testability
Portability	Reliability	Extendibility
Internationalized	Documentation	Ease of Installation
Real Estate (Code Size)		

The implementation company should factor the Acceptance criteria into its Test plans. The process of QA begins at the beginning of an implementation program:



The Quality Assurance Plan begins at the time of finalizing requirements or scoping and gets refined at every stage of the Software development life cycle. Implementation companies should be able to demonstrate their test process and methodologies. These will help in assessing process maturity. Implementation companies make it a habit of not factoring in Systems Integrity testing in their estimation process. They restrict their assignment to Unit testing and functional testing leaving it to the user to do detailed regressions and acceptance test. The lack of Systems Integrity testing can result in poor quality. There are other factors that would affect Technical Quality:

- Staff hiring and Training process – what systems are in place to ensure that staff is skilled in handling the assigned task
- Attrition Management process – when hands change midstream in a project it affects the output. The incumbent is often not in a position to fully appreciate the work concepts designed into the software by the exiting employee. How does the company manage attrition?
- The experience mix of middle managers, subject matter experts and technical review process in place

QUALITY MANAGEMENT

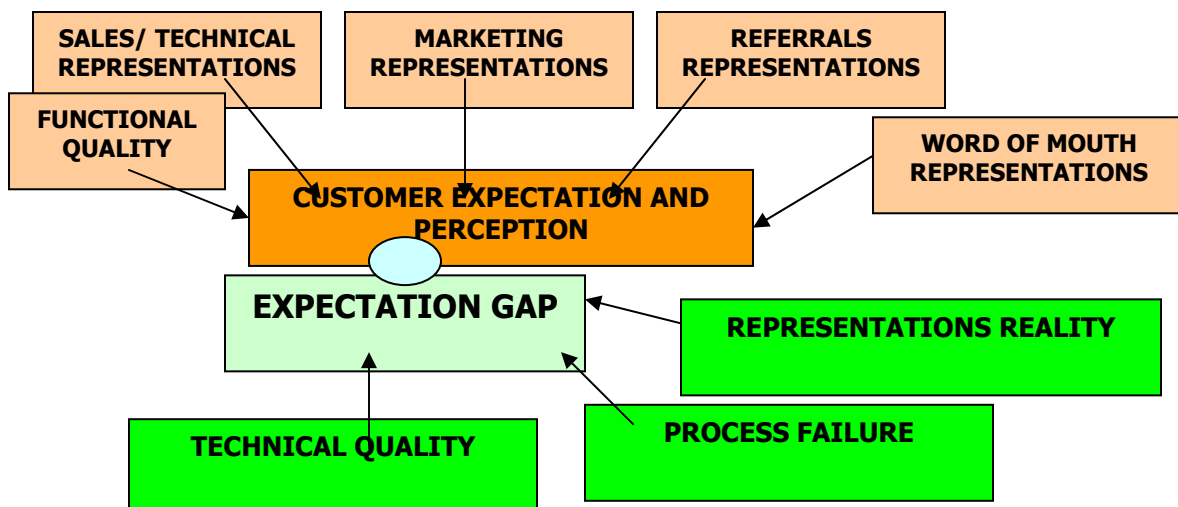
Quality is conforming to customer requirements and expectations. Customer satisfaction results when expectations are met. In our view Quality is a sum of Functional Quality, Technical Quality and Customer Expectations.

The two variables Functional and Technical Quality are managed through process and procedures.

Customer contact personnel are required at every step to exercise judgment in meeting individual customer needs. Functional attributes of quality build a perception and expectation of quality in the minds of a customer. Technical quality is required to deliver to this expectation. Customer contact personnel are required to constantly evaluate this perception or expectation and either improve or set expectations. Managing these expectations is the responsibility of the implementation company. What comes in the way of managing customer expectations?

- Not setting customer expectations
- Sales representations of quality (Functional and Technical) that are further from reality
- Turmoil, attrition and an uninterested, unmotivated staff
- Deliverables not as promised
- Communication gaps and failures

One way of understanding where gaps can occur is to analyze points of interaction and communication and representations and then to examine the process where the failure has occurred.



Customer contact personnel should always be on an alert to understand where these expectation gaps can occur. The company should address these gaps through:

- Setting customer expectations by constant dialog, formal communications, frequent management contact and feedback from customer contact persons
- An action based program that takes customer feedback into account
- A control on representations made by Sales and Marketing and service levels that match these representations
- Minimum disruptions in service caused by attrition
- Quality conformance enforcement by middle managers at every phase of the pre sales, implementation and exit phase of the contract
- A process oriented approach to the engagement, automate and use tools wherever possible
- Frequently measuring the operation and taking immediate corrective action. Measured performance should be made available to the team.
- A mechanism to recognize conformance to quality and customer expectations
- Educate all customer interfacing employees (Sales, marketing, engineering) of their role in the overall service quality
- Adequate training to employees
- Train employees in soft skills
- Empower customer interfacing employees to use judgment to quickly resolve any problems
- Validate all processes to ensure that delivery matches all promises made
- The customer is part of the production process, work toward making the two teams an extension of each other ("virtual employees")
- Tell customers what is possible and what is not possible with reason and justifications.
- Inform customers about any shortfall long before it actually occurs (missed deadlines) not after the event.

BUILD A QUALITY KNOWLEDGE SYSTEM

Companies that hope to excel should build a quality knowledge management system that encapsulates all "learned" experiences. This system should be used to periodically audit processes or train employees so that mistakes are not repeated.

- All customer contact information should be captured in a contact management system. An engagement may involve over 50,000 facts or events that may have some bearing on quality systems.
- Audit teams to understand what they know about their customers business, requirements and imperatives. Analyze customer's feedback on what they feel about how well the company understands its business, needs and priorities.
- Poll the customer to see if they received what they expected, how responsive was the company, how accurate were the representations made, ease of access, speed of response or resolution of problems and the quality of all deliverables
- How did you score with project estimation, over-run on time and cost, return on investment, the gap between expected service and delivered service, project management, change management, resource management, infrastructure, pre during and post implementation support
- What does the customer feel about the skills of people involved, professional competence, cultural adaptation, attitude, communication between teams and concerns on attrition? What suggestions can he offer to improve quality?
- Poll customer interfacing employees for what they felt about the engagement, what went right, what went wrong, where were the gaps, perception of quality, living up to expectations set by company, barriers to better quality and suggestions for improvement.
- If the customer has worked with competitors assess how the company measures against competition.

The burden of managing quality does not lie entirely with the development team of a company. It lies with the entire company. Every function, activity and representation sets an expectation in the minds of the customer and that expectation and perception has to be met by functional and technical delivery.