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A Comparison among the Quality Dimensions of Products and Services: An Evaluation of Customer Perspective

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Abstract: *Quality does not have any unique definition as customers have the freedom to define the quality in different aspects. In general, quality pertains to a number of different dimensions of the products or services. This paper analyzed different quality dimensions exist in literatures which introduced by the quality experts. The list is quite large. From that list this paper finally suggested modified quality dimensions of products or services which must be considered as a basis before consumed the products or services. Through examples we also provided a list of organizations that operates in Bangladesh which are currently following our suggested quality dimensions.*

Introduction:

Today the nature of the society is becoming more globalized and interdependent. This change in the world environment pushed the organizations into a competitive situation to face more challenges for achieving the goal. These challenges include managing growth and change in the global phenomenon of demands, introducing new technology achieving and maintaining low cost of production, and continuously producing quality products and services. Quality refers to the ability of a product or service to consistently meet or exceed customer expectations. Before 1970 even in the U.S.A, as they considered quality was not very important, rather than quality they emphasized on productivity and cost. Frederic Winslow Taylor, the father of scientific management, "gave new emphasis to quality by including product inspection and gaining in his list of fundamental areas of manufacturing management. G.S. Radford improved Taylor's method. Two of his most significant contributions were the notions of involving quality

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considerations early in the product design stage and making connections between high qualities, increased productivity and lower costs(Adam & Evert, 2001). Due to the tremendous importance of quality concept, different methods are introducing in the organizations. Quality expert W. Edwards Deming introduced statistical quality control method to the Japanese manufactures. Joseph Juran introduced his "cost of quality" approach, emphasizing accurate and complete identification and measurement of the costs of quality.

During 1960s, the concept of zero defects becomes very popular, Philip Crosby given the concept (Adam & Evert, 2001). He focused on employee motivation and awareness, and the expectation of perfection from each employee. It evolved from the success of the Martin Company in producing a perfect missile for the U.S Army. In the 1970s, quality assurance methods gained increasing complain in services including government operations, health care, banking and travel industry etc. David Garvin focused on preventing mistakes from occurring altogether. Quality and profits are closely emphasized on customer satisfaction and involved all levels of management (Sasser et al., 1987) as well as workers in a continuing effort to increase quality.

Methodology:

This paper presents a descriptive research and is based on secondary source. Secondary information is used from several sources like journals, news papers, different periodicals and some reputed quality related books.

Quality Dimensions of Product or Service:

In literature, different scientists proposed various types of quality dimensions and that accumulate a large number of dimensions approximately 55. Generally it will be impossible to check all these dimensions before consumed the goods or services. Our main objective of the present work is to concise the list for the betterment of the customers and make a quick test for ensuring quality of the products or services.

Quality Dimensions, according to Gronroos (1990), can be classified into three groups such as technical quality, functional quality and corporate image. This is similar to those proposals by (Lehtinen & Lehtinen, 1991) i.e. physical quality, interactive quality and corporate quality.

The dimensions associated with technical quality are those that can objectively be measured regardless of customers' opinion, while those concerned with functional quality are related to the interaction between the provider & recipient of the service and are often perceived in a subjective manner. The corporate image dimensions relate to the overall picture of an organization perceived by the customers ; it is the result of a combination of technical and functional quality dimensions as well as factors like the price of the product (or service) & the reputation of the company.

Another categorization observed by the (Ghobadian et al., 1994) differentiates between those dimensions which are associated with the quality of the final product or out come of the service and those which relates to the internal processes within the organization; they are called "outcome" and "process" dimensions respectively. The importance of the process dimensions from the customer's view point depends on the extent to which they participate in the process. In a manufacturing sector customers do not normally deal with production process; however, in a service context, customers often have some participation in the process of service delivery. This participation may vary depending on the kind of service.

All characteristics of the product are not equally important to the customers. Usually, only some characteristics need to be considered when assigning quality and these important characteristics are determined by the specific, market goals of the organization and by the technical requirements of the important stages of the conversion process. Qualities of services, in general, differ from quality of manufactured products due to its special characteristics including intangibility, simultaneity and heterogeneity (Dotchin and Oakland, 1994; Ghobadian et al., 1994; Parasuraman et al., 1985). But a number of scientists suggested the quality dimensions which are equally important to the products as well as the services (Garvin, 1987). Our suggested modified quality dimensions (section 4) shall also be equally important to the products as well as the services. (Garvin, 1987) proposed the following eight dimensions of quality that as he stated can define both product and service quality:

Table- 1: Garvin's Quality Dimensions (1987).

1. Performance	2. Durability
3. Features	4. Service ability
5. Reliability	6. Aesthetics
7. Conformance	8. Perceived quality

Mc Call proposed eleven factors for software quality which are widely used in software engineering (Watts, 1987) which is shown in table 2.

Table-2: 11 factors for software quality of Mc Call.

1. Correctness	2. Testability
3. Reliability	4. Expandability
5. Efficiency	6. Portability
7. Integrity	8. Reusability
9. Usability	10. Interoperability
11. Maintainability	-

Source: Watts; 1987

Juran also mentioned few quality dimensions that are represented in Table-3.

Table-3: Juran's Quality Dimensions (1983)

Dimensions	Description
1. Quality of Design	Whether product design addresses customers needs
2. Conformance	Whether the product so produced meets design specifications
3. Availability	Referred to freedom from disruptive problems, it reflect both reliability and maintainability
4. Safety	Risks free from product hazards
5. Field use	Product's conformance and condition after it reaches customer's hand, which may affect by the packaging, transportation, storage and field service competence and promptness.

Source: Joseph M. Duran (1983); Upper Management Quality; 4th edition (New York: Duran Institute)

Parasuraman et al. (1985) make a remarkable contribution to provide some quality dimensions of service in their paper "A conceptual model. Other remarkable contributions comes from Sasser et al. (1987), Haywood Farmer (1988), Schvaneveldt et al.(1991), Gronroos (1990) and Stewart and Walsh (1989). Even though their model was basically for service quality dimensions but some dimensions, we identified equally important for product quality. A combined chart of service and product quality dimensions are representing in the following table:-

Table-3, Comparison among the Quality Dimensions that exist in literature

Para suraman et al (1985) 1	Mc Call et al (Watts; 1987) Dimension 2	Garvin's Dimension (1987) 3	Sasser et al (1987) 4	Hywood Farmer (1988) 5	Stewart & Walsh (989) 6	Gronoos (1990) 7	Schvaneveldtet al (1991) 8
Reliability	Reliability	Reliability	consistency	Timeliness	Reliability Accuracy Mistake free	Reliability Trust worthiness	Accuracy
Responsiveness				Diagnosis Advice Guidance Attentiveness	Timeliness		Responsiveness
Understanding Customers					Understanding user's needs		
Access	Use ability		Availability	Knowledge skill	Ease of access	Accessibility	Ease of use
Competence				Warmth neatness	Competence Knowledge	Professionalism and skill	
Courtesy			Attitude	Politeness	Courtesy & Respect	Attitude and behavior	Emotion
				Communication			
Communication				Honesty	Helpfulness in contact		
Credibility		Aesthetics Perceived		Confidentiality	Credibility	Reputation & Credibility	
Security	Sincerity/ Integrity		Security	Physical facilities	Security		
Tangibles			Conditions		Surroundings		Environment
			Completeness	Handling complaints, Solving Problem	Effective use of technology		Completeness
	Maintain ability	Durability Service ability		Flexibility	Redress	Recovery	
					Capacity for choice	Flexibility	
		Performance					Performance
		Features					
	Correctness	Conformance					
	Efficiency						
	Testability						
	Expandability						
	Portability						
	Reuse ability		Security				
	Inter Operability		Conditions				
			Completeness				

From the table it is very much clear that the list is lengthy and that will really confused the customers to judge quality of the goods or services. Therefore, it is time demand situation to reduce the list so that it will be convenient to judge the quality of the products or services and the present paper will hopefully serve the purpose.

Suggested Modified Quality Dimensions:

From the above discussion, we can provide a modified quality dimension that must be present in a product or service before consuming. The dimensions are presenting in the following table:-

Table:4: Suggested Modified Quality Dimensions

1) Performance	2) Reliability
3) Conformance/Correctness	4) Durability & Serviceability
5) Aesthetics & Perceived Quality	6) Environment/ Physical Facilities

Performance:

Performance is the main characteristics of the product or service. It represents everything work, fit and finished nicely and also works done in a reasonable price. For example, the performance of a television set comprises sound and picture clarity. For an educational environment, performance would be interpreted as the primary capabilities expected of graduates. Garvin (1987), Mc Call et al referred in Watts (1987) and also Schvaneveldt et al. (1991) mentioned the performance dimension is one of the most valuable dimensions to define quality product or service.

Features:

Those characteristics that supplement the basic performance functions are called features. For example, watch with water resist and for educational institutes, feature may be offering courses like computer programming that are not primary. Most of the authors ignored this dimension as Garvin stated; drawing a line to separate performance from features is often difficult.

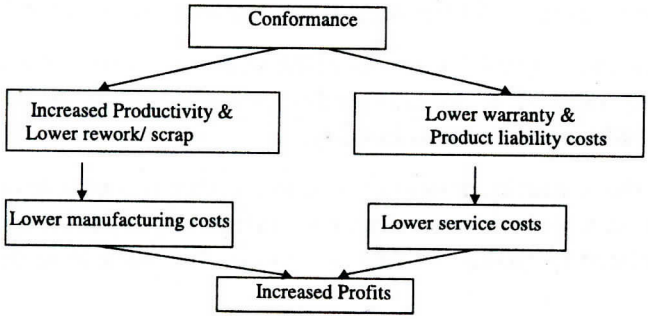
Reliability:

Reliability is nothing but the consistency of performance. The equipment or machines will not break down very often. The man, machine will do the work correctly and if it is the service providing organization, then reliability will represent that the service will be provided within the promised time. Mohammad S. Owlia and Elaine M. Aspinwall (1996) define Reliability as the probability of a product working fault-free within a specific time period, appears to be more relevant to goods than service.

For providing something reliable and consistent management justify GIGO concept i.e, "Garbage in Garbage out concept". If the producer is of quality but the raw materials then product will not be quality one. Some European Countries are using this GIGO concept for importing products. They are asking for ISO certification from the importer as well as supplier of that organization. Almost all of the Quality experts are identified this dimension as a very essential required dimension to define either quality product or services (Garvin, 1987), Watts, 1987), Parasuraman et al., 1985), Gronoos, 1990). Schvaneveldt et al. (1991) defined reliability as accuracy, Sasser et al. (1987) defined it as consistency and Stewart & Walsh (1989) defined the term as accuracy and mistake free.

Conformance:

Conformance refers to the degree to which goods or services conform (i.e., achieve) to the intend of the designers. This is affected by the factors such as the capability of equipment used, the skills, training and motivation of workers, the monitoring process to assess conformance etc. For a variety of reasons, products do not always perform on expected, and services do not always yield the desired results. Whatever the reasons, it is important from a quality standpoint of remedy the situation- through recall and regain of the product, adjustment or buy back or re-evaluation of a service. Example of conformance in higher education can be defined as the degree to which an institution meets educational standards as well as its own promises to clients. This is less important for service quality dimension but very important for product because the organization's goal like profit maximization directly related with this dimension. Quality of conformance will increase the productivity and lower rework or scrap that will lead to lower warranty & product liability costs. As a result production costs will be reduced and also down -size the service cost, the following diagram will clear the concept.



Philiph Crosby who worked several years regarding quality given huge emphasis in conformance. Even he defined quality as "Conformance to requirement, not elegance". This differ from the conventional definition of quality and that is, it does not refer the manner in which the item is constructed or the method by which a service is provided. Rather, this definition is strategic in that it focuses on trying to understand the full array of expectation that a customer has and drives organization to meet the expectation. The equivalent term for service is correctness which is included by Mc Call et al referred in Watts (1987). The dimension also matched with Juran quality dimension.

Durability and serviceability:

Durability is defined as the useful life of the product or service. It is less meaningful for the service proving organization. But the same concept is used in service providing organization as service ability. Serviceability concerned with repairs and field services. Garvin (1987) mentioned durability and serviceability as a different quality dimensions but most of the authors who worked after Garvin regarding quality dimensions, they interchangeably used the concept in Products and service. Watts (1987) termed these as a single word maintainability, Heywood Farmer (1988) explained it by handling and solving the problem, Gronoos (1990) mentioned in his paper that the dimension related to recovery from the difficulties that suffer the organization.

Aesthetics and Perceived Quality:

Aesthetics basically refers appearance, feel, smell, taste etc. for which customers are willing to purchase them. Aesthetics and perceived quality are two dimensions but since they include those features which are subjective to the customers' opinions & reputation factors influencing the customers' image of the corporation. It will not be misleading to emerge them in single dimension. Aesthetics and perceived quality can be distinguished from performance as it is a matter of personal judgment.

Parasuraman et al. (1985), Gronoos (1990) and Stewart and Walsh (1989) defined the same term as creditability and reputations and Heywood Farmer (1988) explained it as honesty.

From the above quality dimension's table, another remarkable dimension is environment to work in service or manufacturing organization. That is directly related to quality product or service. The same term defined by

the different experts by different terms like physical facilities, surroundings, conditions etc.

Implementation of the Results:

Hopefully many organizations which are devoted to operations in Bangladesh, concern regarding quality. Some of have ISO certifications for quality product or service providing process. Berger Company already earns fame & trust world wide because of the reliability and performance. We listed some of the organization's name which following our suggested quality dimensions.

Table 5: Implementation of the suggested Quality Dimensions in Bangladesh perspective

SL	Name of the Organization	Category	Organization's Slogans	Emphasis on Quality Dimension
1	Text Mart	Garments	Fashionable cloths, affordable price	Relates to "features"
2	Comprehensive Holding Ltd	Real Estate	Always aesthetical & functional	Emphasis on aesthetics & performances
3	Read While Grill& BBQ	Restaurant	A great taste of inspiration	Relates to feature
4	Akij Cement	Cement Company	Guaranteed money back	Relate to reliability & performance
5	Berger	Color	Trusted world wide	Relate to performance, reliability, name & fame
6	British American University	Academic institution	Committed to quality	Basically highlights physical serviceability
7	Urban Design and Development Ltd	Real - Estate	Committed to quality	Emphasis on durability, service ability & other feature

Conclusion:

The main problem for the customers is to check the quality of the products and services before purchased or being consumed. And this is because, in reality, no organization agrees to accept that the quality of the products which they are manufactured or the services they provide has the lack of quality. Therefore, management scientists have the responsibility to do research on the problem to help customer to choose the right products or services. The present paper is nothing but a little effort on this direction.

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