Improvement of Repair Service Quality Using Service Quality and Quality Function Deployment Methods (Case Study at UD Dua Teknik ASC PT LG Electronics)

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Abstract:
Authorized service center is an authorized service center appointed and approved by the main party. UD Dua Teknik is a business engaged in electronic repair and maintenance services that focuses on products owned by PT LG Electronics. This research was conducted to improve the service of UD Dua Teknik using the Servqual method and quality function deployment. The research shows that the dimensions of reliability and responsiveness have the largest gap and variables that can be pursued are appearance, service, handling, response speed. Based on the results of the preparation of the House of Quality, the proposed improvement is to provide training on all aspects.

Keywords:
Servqual, quality function deployment, house of quality

INTRODUCTION

Yahya (2010) service center is actually a place for consumers to make repairs to their products. Usually, every well-known brand / brand company will have a service center in every big city in Indonesia and other countries. Each company has the same aims and objectives, namely to provide services and convenience for consumers. All of this is done with the hope that consumers can stay and subscribe to products produced by related companies.

UD Dua Teknik is a business that plays a full role in repair services for complaints or damage to products produced by PT LG Electronics. Basically an improvement is always needed by a business / any institution. Thus this research was made to provide an increase in the services provided by UD Dua Teknik to its consumers. Quality function deployment (QFD) method is a practice to design a process in response to customer needs that can improve service quality.

Here is the definition of quality according to experts:

a. According to ISO-8402 (Loh, 2001:35) quality is the totality of facilities and characteristics of a product or service that meets the needs, express or implied.

b. Tjiptono (2004:11) defines quality as suitability for use. Another definition that emphasizes meeting customer expectations orientation.

c. Kadir (2001:19) states that quality is an elusive goal, because consumer expectations will always change. Every new standard is found, then consumers will demand more to get another new standard that is newer and better. In this view, quality is a process and not an end result (improving continuity quality).

d. Crosby (1979) defines quality as conformance to the requirements of an approach to the transformation of a quality culture.

e. Kotler (1997) defines quality as the overall characteristics and characteristics of a product or service that support the ability to satisfy needs.

f. Taguchi (1987) quality is a loss to society, which means that if there is a deviation from the target, this is a function of reduced quality. On the other hand, the reduced quality will incur costs.

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According to Kotler (2008) service is any action or activity that can be offered by one party to another, which is essentially intangible and does not result in any ownership. According to Moenir (2008) service is a series of activities that take place regularly and continuously covering all people's lives in society. Furthermore, Sinambela (2008) suggests that service is any activity that is profitable in a group or unit, and offers satisfaction even though the results are not tied to a physical product. This shows that service is related to the inner satisfaction of the recipient of the service.

The definition of service according to Zein (2009) is a word that for service providers is something that must be done well. While the definition of service according to Mahmoedin (2010) is an activity or series of activities that are invisible that occur as a result of interactions between consumers and employees or other things provided by service providers that are intended to solve consumer / customer problems.

Based on the above understandings, it can be concluded that service is a form of certain system, procedure or method that is given to other people, in this case, the customer's needs can be met in accordance with the expectations or desires of customers with their level of perception.

Service is a very important thing in the business world because service is a form of appreciation to customers. Service is also one of the considerations for someone to decide to buy a product or use the services of a company. Poor service can make customers run away and switch to other competing companies. Given the importance of service for the continuity of a company's business, it is appropriate that companies must always maintain the service provided to customers. Lovelock and Wirtz (2004) Although services often include important tangibles components, these components together with skilled personnel become the dominant combination in the value creation series for service performance creation.

Service quality method (Servqual) is a questionnaire used to measure service quality. The service quality (Servqual) method is a service quality measurement method that is useful for assessing the service quality of a service provider based on five quality dimensions which are often called q-rater, the q-rater are:
1. Reliability, is the ability to provide the promised service reliably and accurately.
2. Assurance, namely assurance and trustworthiness owned by the company, including the knowledge and courtesy of employees in serving consumers, as well as their ability to maintain consumer trust.
3. Tangible (physical evidence), the appearance of physical facilities and equipment used to provide or provide services, including the appearance of physical facilities, equipment, workers or communication tools.
4. Empathy, namely caring, individual attention provided by the company to consumers, including the ease of making good communication relationships, personal attention and understanding the needs of customers.
5. Responsiveness, namely the desire to help consumers and provide services quickly, namely the desire of staff to help customers and provide responsive service.

Quality measurement in the service quality (Servqual) model is based on a multi-item scale designed to measure expectations on five dimensions for service quality. Evaluation of service quality using the service quality (Servqual) model includes calculating the difference between the value given by the customer to the service received, for each pair of questions related to expectations and perceptions. Service quality (Servqual) scores for each pair of questions relate to expectations and perceptions. The steps that need to be done in the service quality (Servqual) method are as follows:

Determining the average value of perception ($\bar{P}$) for each variable.

$$\bar{P} = \frac{v \sum_{i=1}^{n} Pi}{n}$$

where:
Pi = Perception value given by consumers for question 1
n = Number of respondents

Determine the average expected value for each variable.

$$\bar{E} = \frac{v \sum_{i=1}^{n} Ei}{n}$$

where:

Ei = Expected value given by the customer for the 1st question

n = Number of respondents

To measure the service satisfaction level score:

Service quality score = Perception score – Expected score

or

K L = P – E

Where

KL: Service quality score

P : Customer perception score

E : Customer expectation score

In principle, the data obtained through the service quality (Servqual) instrument can be used to calculate the service quality gap score at various levels in detail:

1. Item-by-item analysis, for example P1-E1, P2-E2, and so on.
2. Dimension-by dimension analysis, for example (P1+P2+P3+ P4/4)-(E1-E2-E3-E4/4) where P1 to P4 and E1 to E5 reflect four questions of perception and expectation related to a particular dimension.
3. Calculation of a single measure of service quality (Servqual), namely (P1+P2 +…..+ P22/22-(E1+E2+.....+E22/22).

By definition, quality function deployment (QFD) is the practice of designing a process in response to customer requirements. Quality function deployment (QFD) translates what customers need into what the organization produces. Quality function deployment (QFD) is a practice towards process improvement that can enable an organization to exceed the expectations of its customers. In other words, quality function deployment (QFD) is a methodology used by companies to anticipate and prioritize consumer needs and wants, as well as incorporate these consumer needs and wants in the products and services provided to consumers.

The structure of the quality function deployment (QFD) is the House of Quality (Bounds, 1994:277), which consists of six components such as the shape of the house. The left house wall (Component 1) is the input from the customer. In this step, the manufacturer tries to determine all the requirements that the customer wants and relates to the product / service. In order to meet customer requirements, manufacturers seek certain performance specifications and require their suppliers to do the same.

Figure 1.
The main structure of the House of Quality

This step is depicted on the ceiling / ceiling of the house (Component 2). The right wall of the house (Component 3) is the planning matrix. This matrix is the component used to translate customer requirements into plans to meet or exceed those requirements. In the middle (Component 4), customer requirements are converted into manufacturing aspects. The bottom of the house (Component 5) is a priority list of manufacturing process requirements. On the roof (Component 6), the steps taken are identification of organizational processes/activities related to manufacturing requirements.

RESEARCH METHODOLOGY
The research methods used in this study are:
1. Designing Service Quality (Servqual) Dimensional Variables and making Service Quality (Servqual) questionnaires.
2. Questionnaire Distribution.
3. Test the validity and reliability.
4. Processing of questionnaire data to determine user expectations and satisfaction.
5. Make a house of quality (House of Quality).
6. Determine actions based on priorities based on the results of the preparation of the House of Quality.

RESULT AND DISCUSSION
Dimensional Variable Design
The service quality variable will be the customer satisfaction variable in the repair service carried out by UD Dua Teknik. Categorized based on five dimensions of service quality (Servqual), as shown in the following table:

Table 1.
Service quality variable

Dimensi Kualitas	Variabel Kualitas	No. Pertanyaan Dalam Kuesioner
Tangible	Penampilan teknisi	6
	Kesiapan peralatan Pengerjaan	8
Reliability	Lama waktu proses pengerjaan	2
	Pertanggung jawaban complain	5
	Hasil layanan pengerjaan	7
Responsiveness	Kecepatan memberikan tanggapan respon, keluhan	1
Assurance	Pengetahuan teknisi	4
Emphaty	Komunikasi teknisi	3

Consumer Weighting
The results of the calculation of the mean show that each mean is tangible = 0.2232 (22%), reliability = 0.3768 (38%), responsiveness = 0.1362 (14%), assurance = 0.1246 (12%), empathy = 0.1391 (14%). It can be seen that the reliability dimension (38%) is considered the

most important by consumers of UD Dua Teknik. This means, if the satisfaction obtained by consumers resulting from UD Dua Teknik services is not good, it will cause enormous dissatisfaction.

Data Processing Service Quality Method (Servqual)

The data obtained from the respondents, namely the expectation-satisfaction data (reality) is used to calculate the gap for each dimension of service quality (Servqual). The calculation results can be seen in Table 2 and the gap value for each variable can be seen in Table 3.

Table 2.
Gap calculation result

No.	Dimensi	Harapan	Kenyataan	Tanpa Bobot	Bobot	Terbobot
1.	Tangible	3,85	3,30	-0,55	0,22	-0,121
2.	Reliability	4,33	3,23	-1,10	0,37	-0,407
3.	Responsiveness	4,70	3,10	-1,60	0,13	-0,208
4.	Assurance	4,30	3,30	-1,00	0,12	-0,120
5.	Emphaty	4,80	4,50	-0,30	0,13	-0,039

Table 3.
Gap value for each variable

Dimensi Kualitas	Variabel kualitas	Mean H	Mean K	Gap
Tangible	Penampilan teknisi	3,90	3,10	-0,80
	Kesiapan peralatan pengerjaan	3,80	3,50	-0,30
Reliability	Lama waktu proses pengerjaan	3,80	3,00	-0,80
	Pertanggung jawaban complain	5,00	3,50	-1,50
	Hasil layanan pengerjaan	4,20	3,20	-1,00
Responsiveness	Kecepatan memberikan tanggapan respon. keluhan	4,70	3,10	-1,60
Assurance	Pengetahuan teknisi	4,30	3,30	-1,00
Emphaty	Komunikasi teknisi	4,80	4,50	-0,30

Service Quality Data Analysis (Servqual)

From the results of data processing, it is found that there are gaps in all service dimensions. The dimension with the largest gap occurs in the reliability dimension, followed by the responsiveness, tangible, assurance dimensions, and the one with the smallest gap is empathy.

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Determination of Voice of Customer

It is the needs and desires of users regarding the services provided by UD Dua Teknik as an authorized service center (ASC) of PT LG Electronics. Made based on the statements in the questionnaire that has a gap score. Voice of Customer can be seen in Table 4.

Table 1.
Gap score Voice of Customer

No.	Variabel	Gap Score
1.	Kecepatan memberikan tanggapan respon, keluhan	-1,60
2.	Pertaggung jawaban komplain	-1,50
3.	Hasil layanan pengerjaan	-1,00
4.	Pengetahuan teknisi	-1,00
5.	Lama waktu proses pengerjaan	-0,80
6.	Penampilan teknisi	-0,80
7.	Kesiapan peralatan pengerjaan	-0,30
8.	Komunikasi teknisi	-0,30

Variable Grouping

Is a step to provide convenience in the selection of variables ranging from variables that can be pursued to variables that are difficult to pursue. The grouping of variables can be seen in Table 5.

Table 5.
Grouping of variables based on the level of effort

No.	Variabel	Tingkat Pengupayaan
1.	Penampilan teknisi	Dapat diupayakan
2.	Komunikasi teknisi	
3.	Hasil layanan pengerjaan	
4.	Pengetahuan teknisi	
5.	Lama waktu proses pengerjaan	
6.	Pertaggung jawaban komplain	Tergantung pihak lain
7.	Kesiapan peralatan pengerjaan	
8.	Kecepatan memberikan tanggapan respon, keluhan	

Preparation of Technical Requirements

Determination of technical requirements is based on the results of the analysis of the service quality (Servqual) method, namely on all the variables tested. This result is the input to fill the technical requirement which is located at the top of the House of Quality. The technical requirements of the UD Dua Teknik service are as follows:

a. Always pay attention to the appearance and completeness of the technician's attributes.
b. Provide training on broader knowledge materials as well as in good communication services to respond to consumer responses.
c. Provide more adequate working equipment.
d. Control back work.
e. Give a business card.

Determination of Relationship Between Voice of Customer and Technical Requirements
This section describes the relationship that can exist or may occur between Voice of Customer and Technical Requirements where the relationship is stated to be strong, moderate, or weak. The relationship is expressed in the form of symbols, namely:

    □   : strong relationship
    0   : medium relationship
    ^   : weak relationship

The relationship between voice of customer and technical requirements can be seen in Table 6.

Table 6.
Relationship between voice of customer and technical requirement

Technical Requirement	Lambang	Voice of Customer
Selalu memperhatikan penampilan dan kelengkapan atribut teknisi	□	Penampilan teknisi
Memberikan *training* materi pengetahuan lebih luas serta dalam pelayanan komunikasi yang baik untuk menanggapi respon konsumen	*0*	Lama waktu proses pengerjaan
	□	Pengetahuan teknisi
	^	Komunikasi teknisi
Menyediakan peralatan pengerjaan yang lebih memadai	□	Kesiapan peralatan pengerjaan
Mengontrol kembali pengerjaan	*0*	Hasil layanan pengerjaan
Memberikan kartu nama	*0*	Pertanggung jawaban complain
	^	Kecepatan memberikan tanggapan respon keluhan

Calculation of Technical Importance and Filling in Column Weight
The calculation of technical importance is done by multiplying the gap by the correlation value for each column in the relationship section and adding down for each 'how' element, after which the calculation results are entered in the Column Weight. The things that need to be considered by UD Dua Teknik are those that have a high weight, because they have a high influence in improving the quality of repair services.

Determination of Relationship of Technical Requirements (Correlation Matrix)
Technical Requirements that have a positive relationship are:
a. Always pay attention to the appearance and completeness of the attributes in accordance with the standards provided by PT LG Electronics such as wearpacks, safety shoes, and so on.

b. Deepen knowledge in related aspects in accordance with the provision of training and experience.
c. Complete the required tools according to applicable standards.

Preparation of Operating Goal/Target Components

Basically the operating goal / target is the output generated from the technical requirements. The following is the preparation of the operating goal / target components based on the determination of the technical requirements obtained from the analysis of the service quality (Servqual) method:

Table 7.
Operation goal repair service

Technical Requirement	Operation Goal/Target
Melakukan pengecekan atribut	Penampilan luar terhadap kelengkapan atribut dari PT LG *Electronics* agar dapat memberikan keyakinan lebih terhadap konsumen
Memberikan *training*	Memberikan perbaikan pelayanan dari berbagai aspek seperti kecepatan penanganan *trouble*, kecepatan analisis kerusakan, penyampaian komunikasi yang baik dan mudah diterima oleh konsumen
Penyediaan peralatan	Peralatan lebih lengkap sehingga dapat memberikan pelayanan yang lebih baik lagi bagi konsumen
Kontrol ulang pekerjaan	Menjaga kualitas hasil layanan dan menghindari komplain *back job*.
Pemberian kartu nama	Memberikan jaminan pertanggung jawaban lebih lanjut untuk kedepannya.

Prioritizing Improvements to Increase Customer Satisfaction

Improvement priorities are arranged based on the rank of the Column Weight of the main structure of the House of Quality, including the provision of training. The training here is not intended only as a theory about how to deal with the product in question, but in all aspects such as how to deal with customers who like to cheat, or even how technicians are able to maintain consistency in appearance according to applicable standards in order to maintain the good name of the company and bring comfort to the company. consumer.

Table 8.
Repair priority list

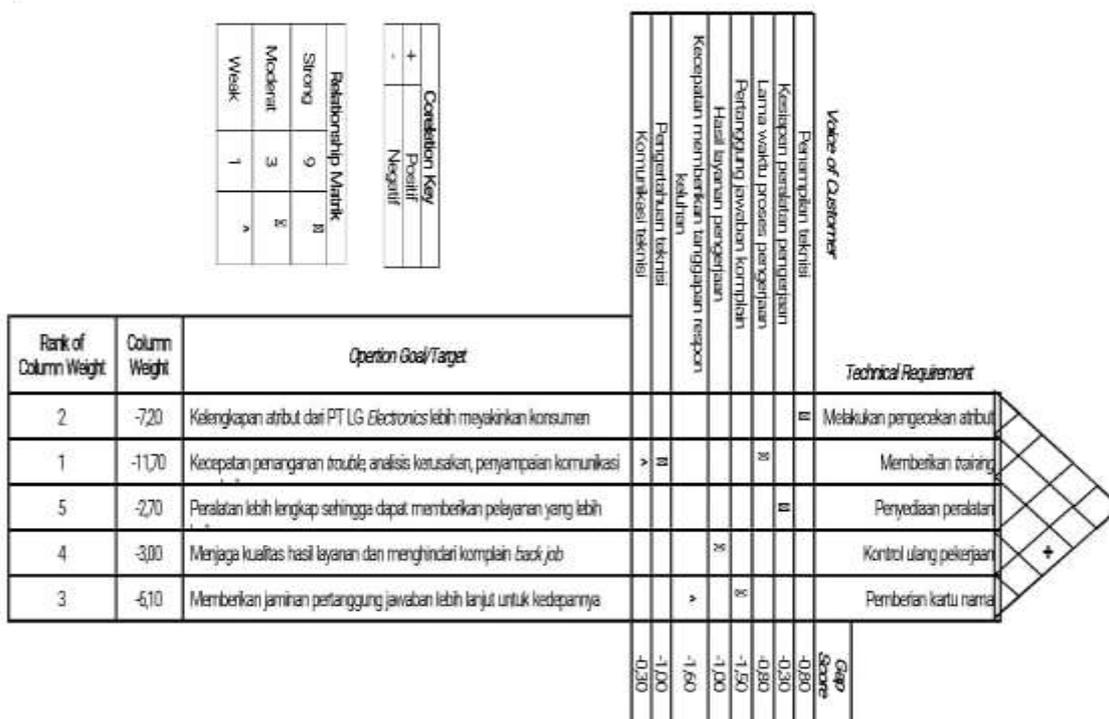| Rank	Technical Requirement	Column Weight
1	Memberikan *training*	-11,70
2	Melakukan pengecekan atribut	-7,20
3	Pemberian kartu nama	-6,10
4	Melakukan kontrol ulang setiap perbaikan	-3,00
5	Penyediaan peralatan	-2,70

Figure 3.
House of Quality Matrix

CONCLUSION

Based on the results of the study it can be concluded as follows:

1. UD Dua Teknik has not been able to meet consumer expectations as evidenced by the gap or difference between reality and expectations which has a negative value. The dimensions that have the largest gap are the dimensions of reliability and responsiveness with some of the variables being variables whose improvement can be sought, namely appearance, service, handling, and responses to consumers so that they are more optimal in accordance with consumer expectations / desires.

2. The House of Quality sets out corrective steps that can be taken by UD Dua Teknik with the biggest priority being providing training which is not only limited to theory on how to deal with the product in question, but also in all aspects such as how to deal with tinkering customers, as well as technicians. able to maintain consistency in appearance according to applicable standards in order to maintain the good name of the company and bring comfort to consumers.

REFERENCES

Adityo, S. Quality Function Deployment (QFD). *https://sutrisnoadityo.wordpress. com/2013/10/05/quality-function-deployment-qfd/.* Diakses tanggal 24 Juni 2020.

Alihamdan. Pengertian Firma, PT, CV, UD Menurut Para Ahli dan Ciri-cirinya. *http://alihamdan.id/pengertian-firma/.* Diakses tanggal 24 Juni 2020.

Fandi Tjiptono. 2011. Kualitas Jasa Pengukuran, Keterbatasan dan Implikasi Manajerial. Majalah Manajemen Usahawan Indonesia. Jakarta.

Ginting, M. & D.I. Halim. (2012). Usaha Peningkatan Kualitas Pelayanan Perpustakaan Ukrida Dengan Metode Servqual dan Quality Function Deployment (QFD). .*Jurnal Teknik dan Ilmu Komputer.* 1(2): 182-195.

Kholil, M., A. Agustina, & Tumin. (2014). Analisis Kualitas Pelayanan Dengan Metode Servqual Untuk Meningkatkan Kepuasan Konsumen di PT. NGK Ceramics Indonesia. *Jurnal Ilmiah Pasti.* 5(3): 48-63.

Kotler, P. dan K. L. Keller. 2009. Manajemen Pemasaran. Edisi 13. Jilid 1. Erlangga. Jakarta

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Kurniawan, A. Pengertian Kualitas–Pelayanan, Unsur, Produk, Para Ahli. *https://www.gurupendidikan.co.id/pengertian-kualitas/.* Diakses tanggal 15 April 2020.

Lupiyoadi, Rambat. 2001. Manajemen Pemasaran Jasa. Salemba Empat. Jakarta.

Yahya, A., Karnadi, M. S., Bohari, S. N., & Suldi, A. M. (2010, May). Evaluating GPS for datum transfer in Hydrography. In *2010 6th International Colloquium on Signal Processing & its Applications* (pp. 1-4). IEEE.

Yuniar, S.C., S. Arijanto, & G.P. Liansari. (2014). Usulan Perbaikan Kualitas Pelayanan Jasa Pengiriman Paket Berdasarkan Hasil Pengukuran Menggunakan Metode Service Quality (Servqual) di PT.X*. *Jurnal Online Institut Teknologi Nasional.* 2(2): 98-109.

Zuhri, A.S. Pengertian Servis (Perbaikan). *http://aguszuhri26.blogspot.com /2014/11/pengertian-servis-perbaikan.html.* Diakses tanggal 16 April 2020.