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QUALITY MANAGEMENT APPLIED THROUGH QFD METHOD

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Abstract: *The purpose of this paper is based on the analysis between the interests of the company and customers' requirements achieved by using QFD method. I have started with a few notions related to the method in order to understand exactly how it applies continuing with a brief overview of the company, and finally the proper analysis and conclusions about this.*

Keywords: *quality, improvement, performance, product, control.*

1. INTRODUCTION

This study represents a national and international concern about quality management for companies. For this, an analysis was made using the QFD method for the company S.C. BETA S.R.L., where the following six basic steps were emphasized: identifying customer's needs, identifying technical needs, the relationship between customer's needs and technical needs, competitive assessment and sales key points, assessment of the technical needs of competing product and services, setting targets and selecting the technical needs that are to be modified in the process.

2. QFD METHODOLOGY

QFD concept is a methodology for systematizing the information obtained from the user in order to get / to define the characteristics of the product / service, market adaptation.

QFD objectives provide information on aspects of the product / improvement service.

The objective is to achieve a design quality of an excellence product / service by transforming customer's needs into quality of product characteristics, without omissions or unnecessary items. [1]

The QFD method is based on the **House of Quality** a set of matrices used to link the voice of the customer and technical requirements of a product, process control plans and manufacturing operations. [3]

3. CASE STUDY USING QFD METHOD AT S.C. BETA S.R.L.

SC. BETA SRL., is a Romanian company, having the legal form of a limited liability company.

The main activity of the company is providing translation and interpretation services from and into any language, under the best conditions.

The company works both locally and nationally, based on cooperation agreements with other leading companies in the same industry. The need for concluding such agreements with other companies in the same field comes due to the fact that in Braşov there

are no authorized translators for strange languages (Flemish, Japanese, Arabic, Swedish, etc.).

The company's activity is of about 3000 pages translated per month, and references from our customers from various areas including national and international companies represent the company's business card.

3.1. The current situation of S.C. BETA S.R.L.

Currently the company does not have documents showing irregularities concerning deadlines. [2]

Reasons for non compliance with deadlines are related to the following aspects:

- large volume of work;
- incorrect communication of the real time to the customer;
- stress at work;
- emergencies.

The aim of the process is to avoid delaying the works from the time agreed with the client.

Strengths that the company owns are:

- Provides application of the Hague Apostille;
- The company collaborates with national translators for translating documents into strange languages (Chinese, Arabic, Swedish, etc.).
- Tutoring at reasonable prices;
- Emergencies are not a problem;
- No work is refused.

Weaknesses of the company:

- disagreements between the time set for making the work and their delivery time;
- duties from the job description do not always correspond to the tasks that employees have;
- some complaints about quality.

3.2. Process mapping for S.C. BETA S.R.L.

✚ Analysis and improvement

Map of processes at S.C. BETA S.R.L.

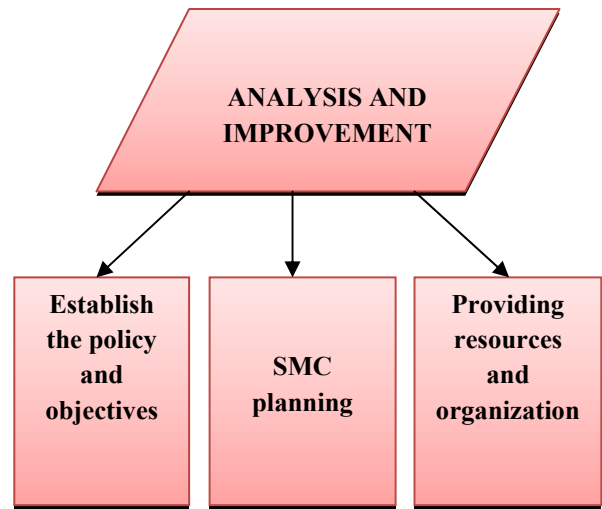


Figure 1. Management processes

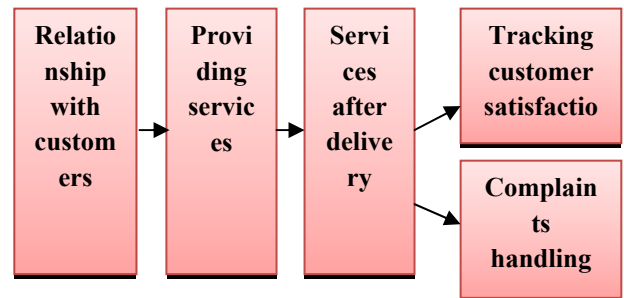


Figure 2. Processes of value creation

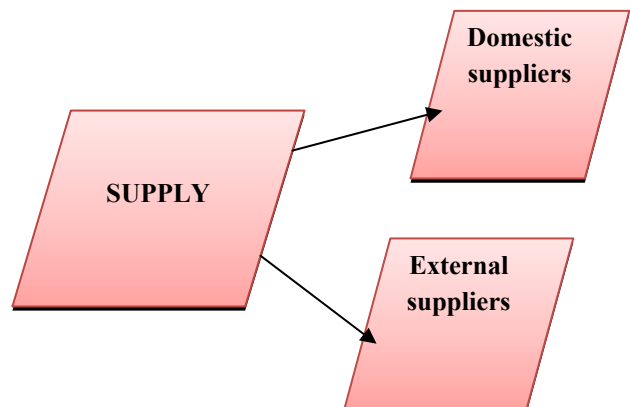


Figure 3. Support processes



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Process sheet at S.C. BETA S.R.L.

Service name: performing services.

- Delays;
- Economic indicators.

Relationship with customers

Customer orientation is an important point for the success and for maintaining S.C. BETA S.R.L. on the market.

The company focuses on customers orientation, identification and analysis of their needs, transposed in products and services on the progress of the interaction with customers, with the aim of developing and maintaining long-term and economically advantageous relationships.

This procedure aims to highlight the relationship with customers, customer's requirements definition, broadening the portfolio of customers, customer satisfaction, efficient document translation process, feedback from customers.

In translation department work translators who translate documents by taking into consideration the deadline and quality of work.

In customer department, the company's PR responsible has the following responsibilities: taking orders, recording and distributing documents to translators, respecting deadline of works, cash responsible, complaints handling.

In management department duties correspond to the general manager who has to role of organizing business activities through regulations and internal order, establishing company strategies aimed to proper functioning of the company.

In order to make translations, translators must be registered on the website of the Ministry of Justice; this gives them the right to make translations on their own name being responsible for each document translated.

SERVICE	INPUTS	ACTIVITY	OUTPUTS
<i>Translations</i>	Marketing study; - Rebates; -Offers for customers;	- Taking orders (works) from customer; - Translating works; - Correction; - Delivering works;	- Delivering works; - Promotion; - Participation to national fairs.
<i>Interpretations</i>	-Offers to existing customers and potential customers.	- Made by telephone, at the request of customers; - Choosing the translator for the required language; - Documents are interpreted; - Payment is made by the customer.	Addressing customer requirements by the company.
<i>Tutoring</i>	-Through advertising.	Individually/ in groups; -At the office or address of the customer.	-Certificate of linguistic competence

Table 1. Process sheet at S.C. BETA S.R.L.

Responsible person: the secretary-PR

Performance Indicators:

- Customer's satisfaction;
- Number of complaints;

The company operates by internal regulations that are set by the manager of the company; they all aim proper function within the company. [2]

These regulations contain information on how the documents should be saved, time, quality of works, tasks that each employee has.

Order note is a reference document that is prepared for a specific number of pages (over 100 pages) and contains translation company data and customer data, term, number of pages and language it must be translated into. This document represents an additional certainty regarding the order.

✚ Workflow consists of:

- Identification;
- Translation;
- Requirements definition;
- Drafting contracts;
- Settlement;
- Satisfaction assessment.

✚ Registrations

- Registration / update of customer database;
- Registration of accounting documents;
- Registration of customer requirements;
- Registration of order notes.

✚ Deviations

The main deviation in this company is the lack of effective communication. The message is often distorted due to the fact that messages are not transmitted properly.

Improving product performance process

Process subject to improvement is the process of time achievement so as to meet the deadlines set by the order.

We want to improve this process because we don't want disagreements between the time set for carrying out the works and the delivery time. It often happens to fail to comply with the time set because of the large volume of work, the emergencies that have priority and wrong estimation of the execution time.

✚ Proper analysis:

The analysis begins by studying the process - customer relationship.

Currently the company does not have documents showing irregularities concerning time-limits.

Reasons for not complying with deadlines are related to following aspects:

- The big volume of work;
- Incorrect communication of the real time to the customer;
- Stress at work;
- Emergencies.

All these irregularities are due to company policy "no work is refused, emergencies are not a problem." Responsible for all these is the general manager.

The aim is to avoid delaying the works as regards the time agreed with the customer. For this it was proposed to apply the method "Deming's Wheel" as follows:

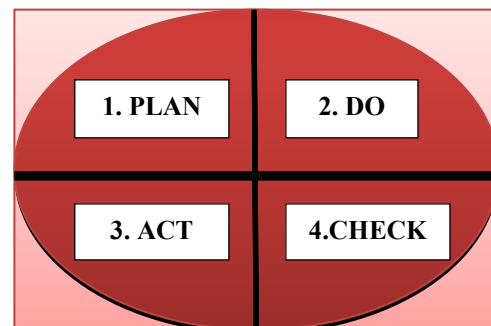


Figure. 4. Improvement - Deming's wheel method [4]

1. PLAN	2. DO
<ul style="list-style-type: none"> • Respect the time allocated to each department; • Consider a higher period of time for the works that are not "urgent"; • "Emergencies" remain a priority; • Record orders in the database; 	<ul style="list-style-type: none"> • Interior regulations on departments • Incentives/penalties;



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3. ACT	4. CHECK
<ul style="list-style-type: none"> • Application of internal order regulations on Departments. ✓ Incentives: • Bonus by the end of the month; • Team-building; • Flexible schedule. ✓ Punishment: • Overtime; • Not giving any incentive; • Compliance with the time allocated to each department; • Record orders in the database; • "Emergencies" remained a priority. 	<ul style="list-style-type: none"> • Evaluation of actual results; • Comparing these results with the targets set in previous planning.

After applying this method significant improvements resulted on how to perform works and timely completion. Streamlining this process entailed not only an ease of process, but also a better relationship between employees and the company thus leading to satisfying customer needs.

Quality assessment by using the EFQM system of S.C. BETA S.R.L.

Orientation to employees

The company puts forward the employees' potential through the experience gained in the field, studies and documents that certify their training.

Issues examined:

- the way human resources are planned and improved;
- the way employees' skills are developed;
- the way employees are involved in setting goals and evaluating results;
- the way employees are involved in improvement actions;
- the way they deal with safety and health at work.

In order to relax and develop relationships between employees, the company organizes monthly team-building and different events.

Next we made **QFD matrix that highlights the correspondence between customer requirements and business interests:**

Table 2. Improvement through the method of Deming's Wheel - details

	4 ▲		4 ▲				CS
		3 ▲					MC
					4 ▲	4 ▲	SC
							C
					3 ▲		EN
	3 ▲	4 ▲					IMS
				3 ▲			IIT
IMPROVING	↓	↓	□	↓	□	□	□
Company Interests	CS	MC	SC	C	EN	IMS	IIT
Requirements							
LP	♣	♣	♣	♥	♥	♥	♣
Q	♣	♣	♦	♣	♣	♣	♣
STW	♣	♦	♥	♣	♣	♦	♠
P	♦	♥	♥	♦	♠	♠	♠
MPC	♥	♥	♠	♠	♣	♥	♠
PC	♦	♥	♠	♠	♠	♣	♠
TOTAL	26	23	17	19	20	21	14

Table 3. QFD matrix- Correspondence between customer requirements and business interests

Were:

- CS - customer satisfaction;
- MC - maintain clients;
- SC - signing contracts;
- C - complaints;
- EN - expanding nationally;
- IMS - increasing market share;
- IIT - increase in turnover;
- LP - low prices;
- Q - quality;
- STW - Short- time working;
- P - privacy;
- MPC - market position of the company;
- PC - prestige company.

Marking way as regards the analysis for the company S.C. BETA S.R.L.:

♣ - very important 1 ♣ = 5 p

♦ - important 1 ♦ = 4 p

♥ - less important 1 ♥ = 3 p

♠ - not important 1 ♠ = 1 p

Marking way in the analysis for the competing company S.C. ALFA S.R.L.

1 ▲ = less important

2 ...

3 ...

4 ▲ = very important

3. CONCLUSIONS

Following the analysis made using QFD, a correlation has been achieved, between customer requirements and business interests.

From QFD matrix we have found that the most important criteria for the company S.C. BETA S.R.L. are customer satisfaction and maintaining it. Competitor, S.C. ALFA S.R.L., besides customer satisfaction focuses on broadening the database (signing agreements).

The company wants to improve the criteria listed in the table in order to be able to achieve its objectives on everything related to service quality, improving customer relationships and possible national expansion.

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