

APPLICATION OF QUALITY SYSTEM METHODS AND TOOLS IN ORDER TO MAKE THE CUSTOMER SATISFACTION BY THE SUBJECT'S POWER SUPPLY SERVICE AS PART OF PREPARATIONS FOR ACCESSING THE POWER MARKET.

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1. INTRODUCTION

The method for analyzing the customer satisfaction by the subject's power supply service while applying quality tools and defining corrections on the basis of drawn conclusions is presented in this paper. One of the most effective ways to find out what makes the customers satisfied is to ask them. On the other hand, it is very important to know whether those who are to make the customers satisfaction know what makes them satisfied. This is why we should compare customers and distributors attitudes towards the customer satisfaction by the subject's power supply service.

2. CUSTOMER SATISFACTION ANALYSIS TO THEIR ATTITUDES FROM THE SURVEY

In order to conduct research on the customer satisfaction from the customer's point of view we will use the results from the survey from 2004, which was carried out by JP "Elektrodistribucija Leskovac" on the Leskovac branch territory. The anonymous survey method has been applied, by the direct contact of the interviewer with the customers at their home addresses, and while selecting the customers for the survey, the presence of groups by their monthly average power consumption, debts and their place of residence have been taken into consideration. The survey was carried out by the standardized inquiry with the "closed" type question domination which includes a wide range of possible attitudes of a certain service quality. Customers are arranged in certain groups and their replies are arranged by groups and services. The survey is full of data and information about customers and their attitudes towards the power supply subject, but liable conclusions cannot be reached easily. We need a tool which will provide us with a complete picture about our customers and their attitudes.

The very thing is available by one of the basic quality tools- Ishikawa diagram. It helps us identify, sort and view possible causes of a certain problem or the quality characteristic, in this case, the customer satisfaction. In this analysis of the customers' attitudes from the survey, the basic Ishikawa diagram has been used which concentrates on causes and effects.

First, we should monitor the customer satisfaction with the distributor's service from the view of external factors. Key data from the survey are input in Ishikawa diagram "Customer satisfaction – external factors".

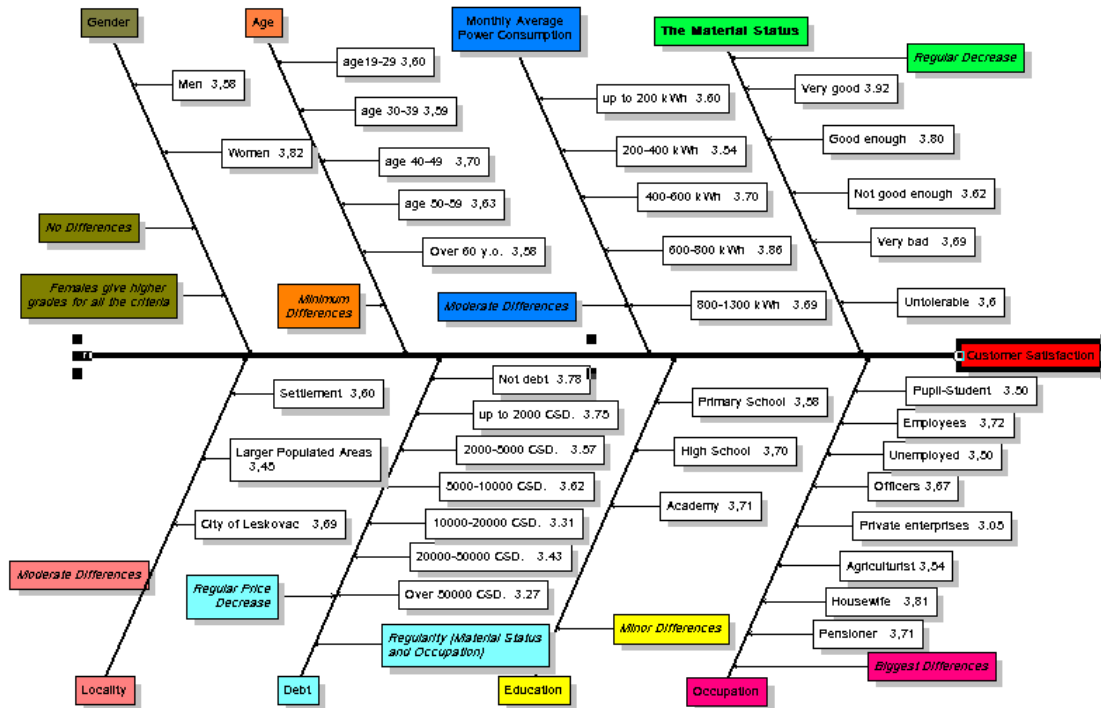


Figure 1 – Ishikawa Diagram “Customer satisfaction – External factors”

It is evident that, on the basis of the marks inscribed beside the description, sex, age and education almost have no effect on customer satisfaction, while the place of residence and the monthly power consumption have moderate effect. When material status is concerned, the customer satisfaction is in regular decrease in conformity with the material status decrease. If the customer satisfaction is monitored through the power consumption debt, there is also a constant decrease of the satisfaction with the debt increase. The biggest differences of the customer satisfaction are noted in the categorization of the customers by occupation. On one hand, the occupation relatively determines the income, which reduces the problem again to the material status; on the other hand, the occupation determines a certain psychological frame, behavior and thinking patterns, as well as expectations, which are the most common cause of big differences of the customer satisfaction.

The second Ishikawa diagram analyzes the customer satisfaction according to all categories in relation to services which are: supply quality and maintenance speed, employees’ attitude towards the customers and the power consumption bill.

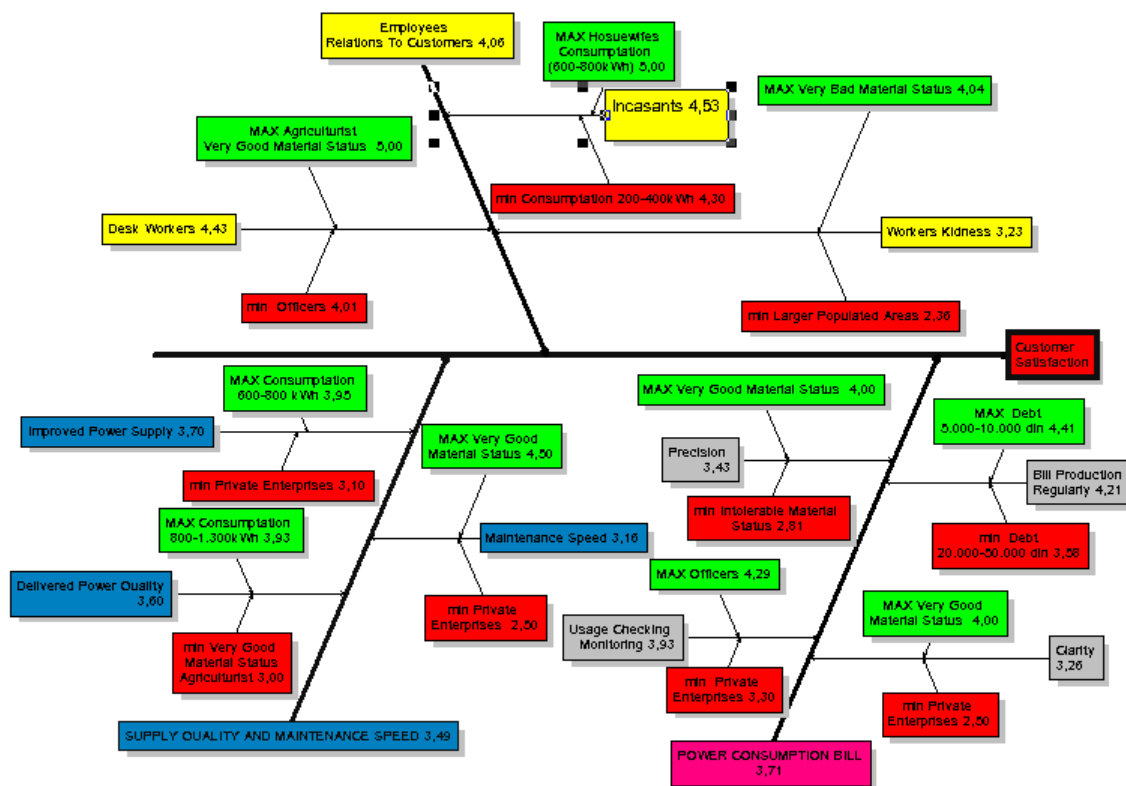


Figure 2 - Ishikawa Diagram “Customer satisfaction –Services”

It can be noticed that the customer satisfaction related to the distributor’s services greatly depends on the material status and partly on the occupation, which has also been noticed in the previous analysis. But this analysis shows, on another account, that the customer’s dissatisfaction with services is pretty subjective and represents the customer’s defensive mechanism – reflexion of weakness due to the low material status. Private enterprises are on several accounts least satisfied with services. This can be explained by high service quality demands which characterize private enterprises.

One can conclude the following from these two analyses:

One cannot have effect on the material status, which greatly influences customer satisfaction, but one can raise the service quality onto the demand level and standard of the most dissatisfaction customers, who are private enterprisers according to our survey. With services as the starting point, independent of the analyzed groups of customers, much can be improved in the supply quality, maintenance speed, bill precision and clarity as well as in the staff’s attentiveness.

3. CUSTOMER SATISFACTION ANALYSIS TO DISTRIBUTOR’S EXPERIENCE

For the customer satisfaction analysis by the subject’s service for the power supply, Leskovac branch formed a team which consisted of employees who have direct contact with customers under various conditions and are directly informed of the customers’ demands and their problems. The first step implied that all of the team members took part in the individual brainstorming concerning customers’ demands, then the individual brainstorming results were combined and perfected with the team brainstorming results. Therefore, customers’ key demands were defined in such a way. Then, key subject services were defined for the power supply and those services are established as main branches of the basic Ishikawa diagram “Customer satisfaction –Distributor’s services”. All team members were presented with a task to input, into this diagram, branches which assign service quality-attributes to main branches which make the

user satisfaction with the service. After individual Ishikawa diagrams have been made, attribute names have been matched and the joint Ishikawa diagram has been composed.

The next step implied the team members to develop the basic Ishikawa diagram into the comparative Ishikawa diagram by introducing weight coefficients which quantify the influence of certain service attributes onto services in question. Weight coefficients were assigned to service attributes so that the total weight coefficient of any service is the same, that is, the customer is completely satisfied with the service, which is the desired goal. In order for this goal to be obtained, a service has to have certain attributes whose influence on the satisfaction is not the same. That is why the team, in keeping with its experience and knowledge, defined by attributes for each service, assigned weight coefficients so that their sum for a service is the same, that is, total customer satisfaction.

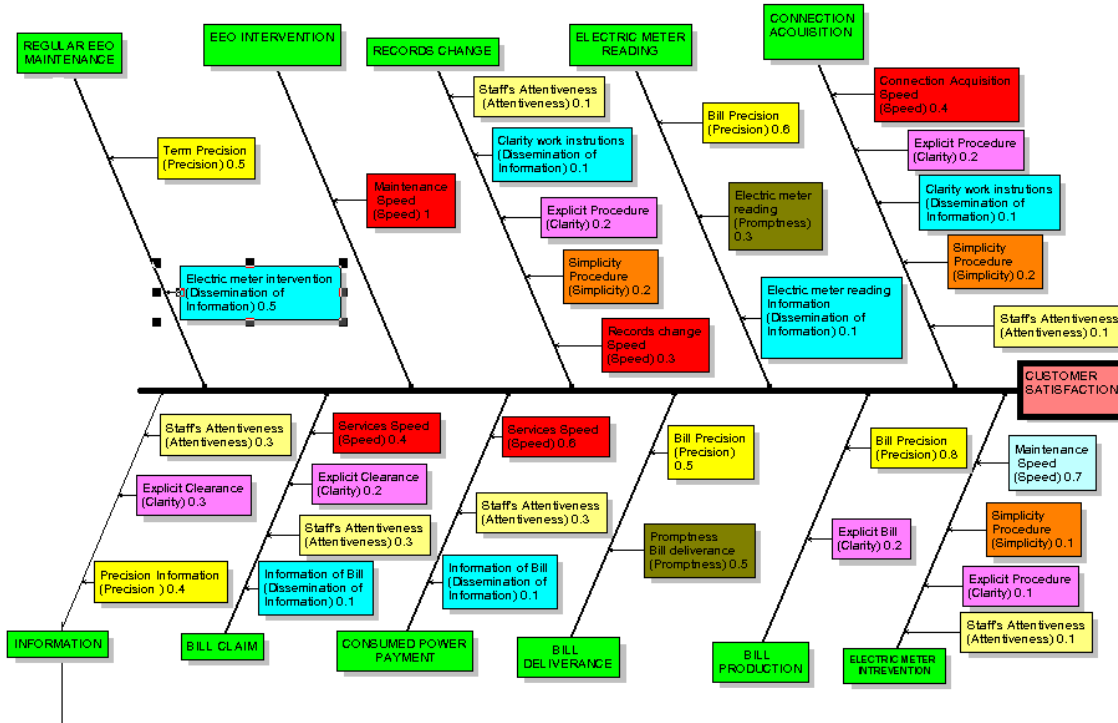


Figure 3 – Comparative Ishikawa Diagram “Customer satisfaction –Distributor’s services”

Then a new Ishikawa diagram has been made where the main branches are composed of service attributes and their branches are services where that attribute appears. All of the team members were given the task to gather information about the number of defined service occurrences in Leskovac branch yearly. According to these data, the third step implies assigning the number of occurrences, of each service, throughout a year multiplied by the weight coefficient of attribute’s values for that service, to Ishikawa diagram “Customer satisfaction –Service attributes”. This is how the relative importance, of each attribute, according to the number of service occurrence, is acquired.

TABLE 1 - Number of occurrences of services and weight coefficients of service attributes

	Service	Number of Occurrences/Year	Coefficient	Value
Attentiveness	Records change	2 556	0. 1	255, 6
	Connection acquisition	324	0. 1	32, 4
	Information	7 356	0. 3	2206, 8
	Bill claim	12 756	0. 3	3 826, 8
	Consumed power payment	508 944	0. 3	152 683, 2
	Electric meter intervention	4 860	0. 1	486
Sum				161 985, 6
Speed	Records change	2 556	0. 3	766, 8
	Connection acquisition	324	0. 4	129, 6
	EEU interventions	795 832	1	795 832
	Bill claim	12 756	0. 4	129, 6
	Consumed power payment	508 944	0. 6	305 366, 4
	Electric meter intervention	4 860	0. 7	3 402
Sum				1 110 599, 2
Clarity	Records change	2 556	0. 2	511, 2
	Connection acquisition	324	0. 2	64, 8
	Information	7 356	0. 3	2 206, 8
	Bill claim	12 756	0. 2	2 551, 2
	Bill production	508 944	0. 2	143 608, 8
	Electric meter intervention	4 860	0. 1	486
Sum				148 942, 8
Dissemination of Information	Regular EEO maintenance	482 286	0. 5	241 143
	Records change	2 556	0. 2	511, 2
	Electric meter reading	630 816	0. 1	63 081, 6
	Connection acquisition	324	0. 1	32, 4
	Bill claim	12 756	0. 1	1 275, 6
	Consumed power payment	508 944	0. 1	50 894, 4
Sum				356 938, 2
Promptness	Electric meter reading	630 816	0. 5	315 408
	Bill deliverance	630 816	0. 5	315 408
Sum				630 816
Simplicity	Records change	2 556	0. 2	511, 2
	Connection acquisition	324	0. 2	64. 8
	Electric meter intervention	4 860	0. 1	486
Sum				1 062
Precision	Regular EEO maintenance	482 286	0. 5	241 143
	Electric meter reading	630 816	0. 6	378 489, 6
	Information	7 356	0. 4	2 942, 4
	Bill deliverance	630 816	0. 5	315 408
	Bill production	718 044	0. 8	574 435, 2
Sum				1 512 418, 2

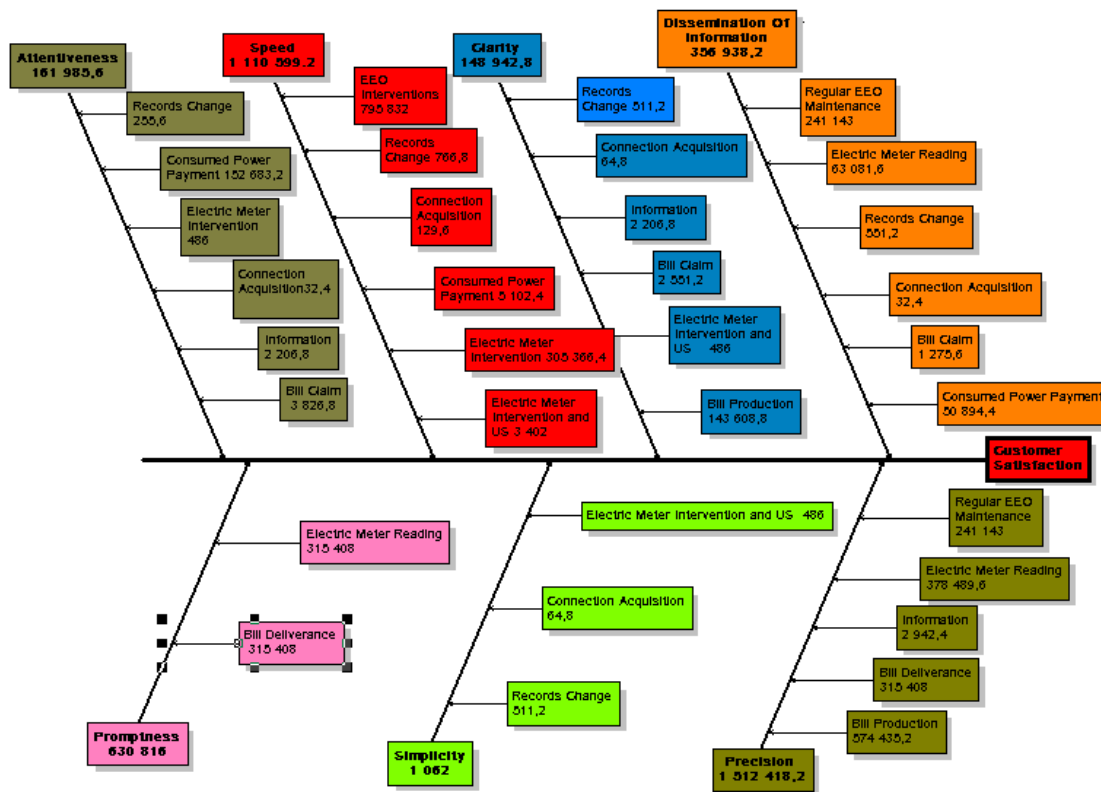


Figure 4 Comparative Ishikawa Diagram “Customer satisfaction – Service attributes”

These results are easily processed by Pareto method. Arranging service attributes in declining relative attribute values to number of occurrences and their input into the coordination system result into Pareto diagram. Such Pareto diagram provides a cumulative curve above it. The break off point on the cumulative curve (a point of a significant change in the diagram) separates the vital minority from the trivial majority.

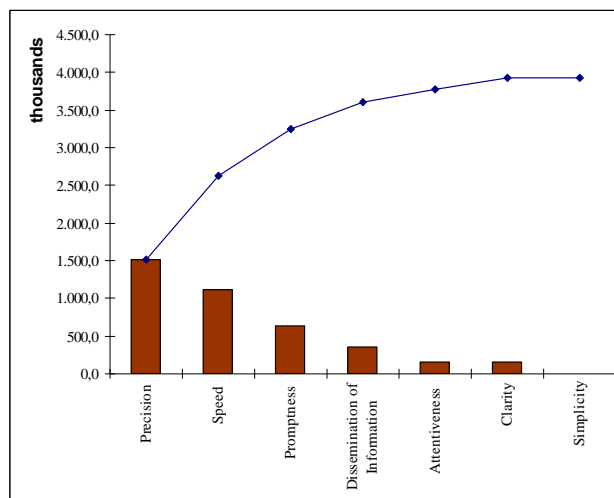


Figure 5 Pareto diagram

TABLE 2 - Service attributes

Service attributes	Relative attribute importance
Attentiveness	161. 985, 6
Speed	1. 110. 599, 2
Clarity	148. 942, 8
Dissemination of Information	356. 938, 2
Promptness	630. 816, 0
Simplicity	1. 062, 0
Precision	1. 512. 418, 2

This analysis shows that dominant service attributes expected from the distributor by the customer are: precision, speed, promptness and dissemination of information, which greatly corresponds to the survey results of the customer satisfaction analysis.

TABLE 3 - Corrections

	Brief problem description	Problem occurrence location	Corrections	Improved attributes
1.	Relatively significant distance of the cash counter for the customers from the southern part of the town	Power payment by the customers from the southern part of the town	Establish a new counter within Leskovac branch for the customers from the southern part of the town	Speed
2.	Certain number of customers' meters are not read due to their being unavailable	Customers whose meters are unavailable	Reread the meters, not read when available	Precision
3.	Certain number of customers lodge a number difference complaint on bill and terrain	Byers' meters	When reading, check meter numbers and improve records	Precision
4.	Certain number of customers' precision reading complaints	Input error or status input error	Perform Psion reading, avoid data input and input errors	Precision
5.	Customers need fast and important information without coming to the plant	Dissemination of information	Provide a telephone information line – answer machine and a line for all types of customers' information	Dissemination of information
6.	On some accounts customers need detailed information	Services	Establish the customers' counseling office	Dissemination of information
7.	A customer wanders around departments before he reaches the officer	Administrative building	For all customers and service categories there are certain officers on the ground floor for basic services who set meetings with higher officers if necessary	Dissemination information speed
8.	Complaint counter in the payment department causes crowding and makes customers nervous	Counter department	Separate the complain counter from the payment counter (separate entrance and premise)	Speed
9.	Reference number errors in transfers	Book-keeping	Send a filled out payment order together with the power bill	Precision
10.	Certain activities require mass media	Public	Establish the public relations department	Dissemination of information
11.	It is very hot in the counter department during summer and customers feel uncomfortable and give up paying	Counter department	Air condition the counter department	Comfort
12.	Waiting to pay in the queue results in customers being nervous	Counter department	Provide a video beam with constantly running key information for customers	Dissemination of information

4. CONCLUSION

There have been organizational changes of the power supply subject, but it is not certain how it would be made private or the way deregulation would be reinforced. However, the market access means tough contestants and entering private sector means tough opponents.

Rivals in the market will be defeated if we keep our customers, and we will keep them only if we meet their needs. Opponents will be overcome if we are more attractive in entering the private sector, which we should be only if we charge our goods, although hard to undertake. This is why our customer has to be satisfied. Only the satisfied customer pays our goods easily.

In both present and future business conditions, no matter whether we are entering the private sector or deregulation is being reinforced, our business stays the same, constant power supply quality improvement and raising the service level in order to make the customer more satisfied.

A quality system has been introduced, processes defined and there are quality methods and tools. Simple methods and tools easily enable us, working as a team, get important information which help us make improvements. Employees who work under these conditions are more satisfied and professionally satisfied, because their knowledge and experience is required, recognized and appreciated, and good suggestions reinforced.

Therefore, we should arouse our creativity; find locations where to apply, and ways, how to apply quality methods and tools, so that employees are professionally satisfied and customers satisfied.

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