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Customer Satisfaction Survey Analysis – Ultimate Tool for Measuring Quality of Software Services Today

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Abstract: *Gathering feedback from important customers, measuring and periodical comparing of normalized results provide ultimate approach to assure customer satisfaction and loyalty. One approach for measuring customer satisfaction in software services industry is presented in this paper.*

Keywords: *Quality Assurance, Software, Quality System, Customer Satisfaction Survey, IT Solution and Services*

1. INTRODUCTION

Delivering superior experiences throughout the customer lifecycle is critical for driving sustainable competitive advantage, customer loyalty, and business success.

Satisfying customers is the only way to stay competitive in today's marketplace. Customers have an expectation of service and product performance that must be met.

The growing number of academic studies on customer satisfaction and the mixed findings they report complicate efforts among managers and academics to identify the antecedents to, and outcomes of, businesses having more- versus less-satisfied customers. These mixed findings and the growing emphasis by managers on having satisfied customers point to the value of empirically synthesizing the evidence on customer satisfaction to assess current knowledge. To this end, the authors conduct a analysis of the reported findings on customer satisfaction. They document that equity and disconfirmation are most strongly related to customer satisfaction on average. They also find that measurement and method factors that characterize the research often moderate relationship strength between satisfaction

and its antecedents and outcomes. The authors discuss the implications surrounding these effects and offer several directions for future research.

One of the fundamental assumptions of customer satisfaction measurement is that *higher satisfaction levels improve future financial performance by increasing revenues from existing customers* (due to higher purchase quantities and lower price elasticity) and improving customer retention.

Our initial analyses examine whether current satisfaction levels for individual customers are associated with changes in their future purchase behaviour and firm revenues.

We examine the measure of customer satisfaction in order to predict future purchase behaviour of existing customers using data from our major clients from telecommunications and insurance services. This analysis provides initial measures of customer satisfaction for assessment of software delivery performance perception by our customers.

2. CUSTOMER SATISFACTION SURVEY AS TOOL FOR MEASURING OF CUSTOMER SATISFACTION

The balancing act between what customers want and what our company can provide must be optimized in order to maximize our firm's long-term profits. This occurs in two ways:

- With precise information, companies can focus on issues that truly drive customer satisfaction. A directed focus often leads to cost reductions because companies can emphasize improvement in areas of customer concern and de-emphasize focus in other areas.
- Focusing on motivators of customer satisfaction leads to more loyal customers, who tend to be the most profitable customers (i.e., repeat business is usually the most profitable). An inclusive customer satisfaction and loyalty program can, therefore, be considered a source of future profits.

The goal of this research is to help our company maximize long-term profitability through reaping the "lifetime value" of its customers.

Knowledge of customer's perceptions and attitudes about an organization's business will greatly enhance its opportunity to make better business decisions. To use customer's perceptions and attitudes to assess the quality of products and services, customer satisfaction instruments must accurately measure these perceptions and attitudes.

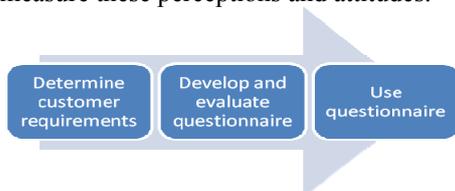


Figure 1 – A general model for the development and use customer satisfaction questionnaires

Step 1 in the process is identifying customer's requirements or quality dimensions, the important characteristics of a product or service. Knowledge of customer requirements provides a better understanding of the way your customers define the quality of your services and products and will facilitate the questions that should assess the extent to which customer are satisfied on each of the quality dimensions.

Step 2 is developing the questionnaire, which ultimate goal is to develop a questionnaire that allows the assessment of specific information about customer's perception.

Step 3 represent the many uses of customer satisfaction questionnaires, each of them allows us to obtain specific information about customer's perception. The uses vary from identifying current status of customer satisfaction to assessing its changing over time.

3. DESIGN THE SURVEY

Identify customer's requirements

In this paper one approach for measuring customer satisfaction in software services industry is presented. IT Solutions and Services (ITSS) provides information technology solutions and services for the complete IT service chain – from consulting to systems integration and IT infrastructure management right through to industry-specific IT solutions. Monitoring the satisfaction of interested parties requires the evaluation of information relating to the perception of interested parties as to the extent to which their needs and expectations have been met.

One of the main characteristics of ITSS like companies is quality of outsourcing services.

Outsourcing in the information technology field has two meanings:

- One is to commission the development of an application to another organization, usually a company that specializes in the development of this type of application.
- The other is to hire the services of another company to manage all or parts of the services that otherwise would be rendered by an IT unit of the organization.

The latter concept might not include development of new applications.

Organizations that outsource are seeking to realize benefits or address the following issue:

- Cost savings
- Focus on Core Business – outsource other noncore services
- Cost restructuring — including outsourcing company to making variable costs more predictable.
- Improve quality — defining quality through contracting out the service with service level agreement.
- Knowledge — Access to intellectual property and wider experience and knowledge.
- Contract — Services will be provided to a legally binding contract with financial penalties and legal redress.
- Operational expertise — Access to operational best practice that would be too difficult or time consuming to develop in-house.
- Access to talent — Access to a larger talent pool and a sustainable source of skills, in particular in science and engineering.
- Capacity management — an improved method of capacity management of services and technology where the risk in providing the excess capacity is borne by the supplier.
- Catalyst for change — an organization can use an outsourcing agreement as a catalyst for major step change that cannot be achieved alone. The outsourcer becomes a Change agent in

the process.

- Enhance capacity for innovation — Companies increasingly use external knowledge service providers to supplement limited in-house capacity for product innovation.
- Reduce time to market — the acceleration of the development or production of a product through the additional capability brought by the supplier.
- Commodification — the trend of standardizing business processes, IT Services, and application services which enable to buy at the right price, allows businesses access to services which were only available to large corporations.
- Risk management — an approach to risk management for some types of risks is to partner with an outsourcer who is better able to provide the mitigation.
- Venture Capital — some countries match government funds venture capital with private venture capital for start-ups that start businesses in their country.
- Tax Benefit — Countries offer tax incentives to move manufacturing operations to counter high corporate taxes within another country.
- Scalability — the outsourced company will usually be prepared to manage a temporary or permanent increase or decrease in production.
- Creating leisure time — Individuals may wish to outsource their work in order to optimize their work-leisure balance

A negative implication of outsourcing includes:

- Quality risk - is the propensity for a product or service to be defective, due to operations-related issues
- Quality of service - in poorly defined contracts there is no measure of quality or SLA defined.
- Productivity - outsourcing for the

purpose of saving cost can often have a negative influence on the real productivity of a company. Rather than investing in technology to improve productivity, companies gain non-real productivity by hiring fewer people locally and outsourcing work to less productive facilities offshore that appear to be more productive simply because the workers are paid less.

- Staff turnover - The staff turnover of employee who originally transferred to the outsourcer is a concern for many companies. Turnover is higher under an outsourcer and key company skills may be lost with retention outside of the control of the company
- Failure to deliver business transformation - Business transformation promised by outsourcing suppliers often fails to materialize. In a commoditised market where many service providers can offer savings of time and money, smart vendors have promised a second wave of benefits that will improve the client's business outcomes
- Security - Before outsourcing an organization is responsible for the actions of all their staff and liable for their actions. When these same people are transferred to an outsourcer they may not change desk but their legal status has changed
- Qualifications of outsourcers - The outsourcer may replace staff with less qualified people or with people with different non-equivalent qualifications. The argument centres on the definition of an engineering graduate and also disputed numbers

Develop the questionnaire

Quality in terms of end-user-experience is best measured through customer satisfaction questionnaires which are professionally designed to capture an unbiased view of quality. Surveys can be one of research.

Q No	Question	Area of interest
1	Satisfaction with the quality of our work	Quality
2	Satisfaction with the timeliness of our delivery	Flexibility
3	Satisfaction with the quality of communication with your peers in our Company	Communication
4	Satisfaction with the flexibility of our people (teams)	Flexibility
5	Satisfaction with the responsiveness of our people (teams)	Flexibility
6	Satisfaction with the know-how level of our people (teams)	Competences
7	Satisfaction with the help you get from our Company	Competences
8	Satisfaction with our reliability and keeping agreements	Quality
9	Satisfaction with the overall cooperation with our Company	Quality

Q No	Question	Area of interest
10	How do you perceive our Companies value for money provided to you, comparing to other providers you have	Price
11	Name one thing that you would like to see improved or changed regarding your cooperation with our Company:	Descriptive answer, open question

Table 1 - Questionnaire definition

This allows quality to be tracked over time and also for corrective action to be identified and taken.

In next three steps, we will design the survey with primary goal to cover main challenges of ITSS delivery process.

Step 1: identifying information relating to the perception of customer's as to the extent to which their needs and expectations have been met.

First we will, based on the understanding of specific business model ITSS define the areas that we examine.

According to the importance to our customers we have established next criteria:

1. Quality of delivered work (Quality)
2. Flexibility of contractor
3. Qualifications of outsourcers (Competences)
4. Cost management (Price)
5. Communication

We will try to get a ranking list of the top 3 most important elements, from 5

offered, for customer to cooperate with us, in order to better focus on understanding of the response from the client. After that the client fills out a questionnaire, and after analyzing the results of the questionnaire suggest measures for improving the quality of our services.

The general question is to understand, how our customers perceive our partnership in general.

Which are the three (3) most important things relevant to you regarding your cooperation with our Company?

Select and rank from list: Flexibility, Price, Communication, Quality, Competences

Step 2: developing the questionnaire

In this step we have selected 11 questions with coverage of 5 main area of interest (Table 1 Questionnaire definition).

In Table 2 Questionnaire metrics, we choose matrices ranges

Grade	Description
5	Very satisfied
4	Satisfied
3	Good, but can be better
2	Dissatisfied
1	Very dissatisfied

Table 2 - Questionnaire metrics

4. SURVEY RESULTS

Identifying status of satisfaction

Step 3 in process is identifying current status of customer satisfaction.

After process of completing of surveys on selected pattern we need to compile the answers from different customers. We need to look for trends. We should look for differences by type of business and characteristics of delivered product/services.

Table 3 Top 3 most important factors relevant to cooperation with client, show that customers' most important things are

focused on quality of work, communication and price, which corresponds with main triggers for outsourcing their work to subcontractors: *Focus on Core Business, Managing and savings costs, risk management (communications) and Improve overall business quality.*

Which are the three (3) most important things relevant to you regarding your cooperation with our Company? Select and rank from list: <i>Flexibility, Price, Communication, Quality, Competences</i>	
1	Quality
2	Communication
3	Price
4	Flexibility
5	Competencies

Table 3 - Top 3 most important factors relevant to cooperation with client

On Table 4 Survey summary we can see the summary of Survey.

After inspection of the results of the analysis we see that the best rated answers are 5: *Satisfaction with the responsiveness of our people (teams)* and 9: *Satisfaction with the overall cooperation with our Company.*

This result affects the essence of the ITSS of business arrangements and says that the process of delivering services is aligned with the client expectation. When you look at the area from which the question belongs, and that is Quality area, which customers recognized as most important, conclude that the delivery management process is on track.

The average scores of all answers were above 4, which mean: Satisfied, indicating that the process of delivering services that are balanced and take into

account the elements of performance.

Lowest average score had answer on question 2: *Satisfaction with the timeliness of our delivery* and the average grade is 4.125. This question belongs to an area which describes flexibility of delivery service. Clients estimate that our delivery process could be more dynamic and flexible to emerging requirements. It means that we have to adopt internal organizational processes of delivery services and/or products for core processes of our clients in order to remain good partnerships and sustainable business cooperation.

Now we'll see more detail the issues that have lower grades than the average achieved, namely 4.5 and it belongs to three areas: Quality, Communication and Price.

Respond to the need to pay attention and make an action plan for monitoring and improving the:

- Question 2: Satisfaction with the timeliness of our delivery (average grade 4.125, area Flexibility)

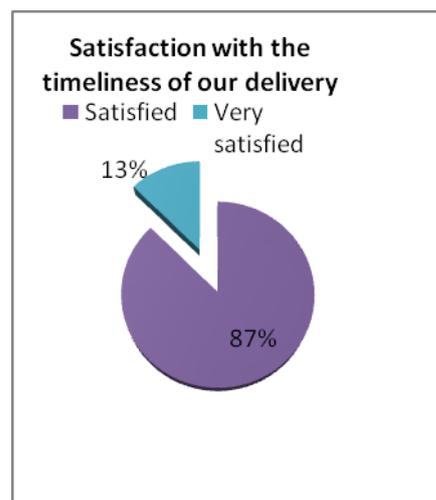


Figure 2 - Question 2: Satisfaction with the timeliness of our delivery

Customer Satisfaction Survey results						
	Number of Cust. asked	Number of Cust. answ.	Average Grade	Worse	Comparable	Better
Satisfaction with the quality of our work	8	7	4,500			
Satisfaction with the timeliness of our delivery	8	7	4,125			
Satisfaction with the quality of communication with your peers in our Company	8	7	4,750			
Satisfaction with the flexibility of our people (teams)	8	7	4,625			
Satisfaction with the responsiveness of our people (teams)	8	7	4,875			
Satisfaction with the know-how level of our people (teams)	8	7	4,500			
Satisfaction with the help you get from our Company	8	7	4,625			
Satisfaction with our reliability and keeping agreements	8	4	4,250			
Satisfaction with the overall cooperation with our Company	8	6	4,750			
How do you perceive our Company's value for money provided to you, comparing to other providers you have	8	6		0	3	3

Table 4 - Survey summary

- Question 8: Satisfaction with our reliability and keeping agreements (average grade 4.25, area Quality)

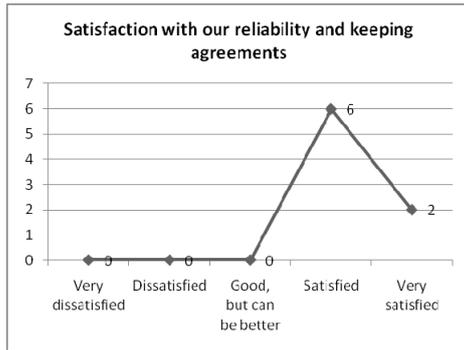


Figure 3 - Question 8: Satisfaction with our reliability and keeping agreements

6. FINAL STEP

Improve

With precise information, acquired after analyse of CSS, companies can focus on issues that truly drive customer satisfaction.

However, we need to act on the information that we get from customers though the survey. We need to fix the things the customers have complained about. Also, we need to investigate their suggestions.

Results of Survey discover that company have to focus to improve ...

After the analysis of CSS results we got that answers on a few questions differ from the average value obtained as an outcome of research.

Clients have also decided that the three characteristics of services that are delivered to him are the most important: quality, communication and prices.

When we cross examine these two criteria, we need to make an action plan to improve the Question 8: Satisfaction with our reliability and keeping agreements.

Steps to be taken are:

- define goals
- define roles and team
- define metrics
- assess costs
- decide on the justification of investment according to the importance of client

For an issue that has received the lowest score, Question 2: Satisfaction with the timeliness of our delivery, we will make a decision that should be part of the regular review of relations with the client. As the score is in the satisfying domain, we will verify it in the following reviews.

We also shall establish communication with the client, and let him know that we have received the message. We will not burden our company with additional costs of implementing a special improvement program, because the question don't have top ranked importance and we want to avoid unnecessary reduction of our profitability.

7. CONCLUSION

We need to improve our company and product in those areas the mean the most to the most of our customers.

Most importantly we need to give them feedback that their answers were appreciated and are being acted upon.

Customer Satisfaction is a subjective measure. It is a measure of perception, not reality, although when it comes to a happy customer, perception is more important than reality.

One phenomenon that we have noticed is that as our products, services and processes have improved, the expectations of our customers have increased. They continue to demand bigger, better, faster. This can result in a flat trend even though we are continuously improving. Or worse still a declining graph because we are not keeping up with the increases in our customer's expectations. Even though this can be discouraging, it is valuable information that we need to know in the very competitive world of software.

Customer Satisfaction Survey Process applied in this paper consists of next steps:

- *Preliminary analysis*: customer satisfaction research objectives should be specified in this stage, in order to

assess satisfaction dimensions (customers' consistent family of criteria).

- *Questionnaire design* and conducting survey: using results from the previous step, this stage refers to the development of the questionnaire, the determination of survey parameters and the survey conduction.
- *Analysis*: the two different approaches come to prediction. In case the prediction is not considered satisfactory, a new selection of

questions is made and the process of analysis restarts.

Satisfying our customers is an essential element to staying in business in this modern world of global competition. We must satisfy and even delight our customers with the value of our software products and services to gain their loyalty and repeat business.

Customer satisfaction is therefore a primary goal of process improvement programs..

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