Measuring CS by Critical Factor Index in Pricing Process

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Abstract: The aim of this study is to identify and examine the critical parts of a pricing process, from customer's point of view. A questionnaire used in this study is based on Sense and Respond –method. It utilizes importance, experiences, gaps, deviations and direction of development, and clarifies the critical areas of the pricing process. Many development areas where found but focus should be on the most critical areas, which were related to configurator's usability: the overall usability and getting products to a tender.

Key words: Pricing process; Critical factor index; Customer satisfaction

1 Introduction

Global markets and increased competition accelerates the need for an efficient process of generating a quotation and obtain correct information about products and prices.

The Common Configurator Platform (CCP) is the global tendering tool and it serves as the communication tool between the Front End Sales (FES), Global Marketing Units (GMU), and Source Locations (factories, service or assembly units). This study focuses on the obtaining of price information from one of the configurators connected to CCP.

The goal of this study is to identify the critical parts of the pricing process that need further development in order to meet the needed level of performance. Taken into account the magnitude of pricing process the actual method used to produce the prices (pricing strategy) was left out of the scope.

2 Research Method

Research theory is based on a method introduced by Rautiainen and Takala, which is a tool to measure the quality of service. It measures expectations and experiences of the customer's in order to evaluate the performance of the service. The gap between expectations and experiences, direction of development and importance are calculated. Combined with standard deviations of the expectations and experiences, the results are used to calculate Critical Factor Index (CFI).

Evaluating the functionality of the processes is the important part of the process mapping and process management. Evaluating can be done by inner or outer customer of the process. By questioning these groups, the assessment of the different attributes of the process can be made. In other words, the quality and performance of the process are evaluated by using certain measurement system. With gathered numerical data, respondents' opinions about the importance and performance of the selected attributes can be measured. From the development point of view, the most important attributes are those that are considered to be important, but are performing weakly.

In the business process level, performance factors are such as *customer satisfaction, flexibility* and *efficiency and productivity*. In the operative level, for one, indicators are *quality, delivery time & reliability, lead-time and cost*

2.1 Tools in the questionnaire

There are several indexes calculated from the results of the questionnaire. These tools are used to get a more overall interpretation of the results. In the research method used averages and standard deviations for all the measured attributes are calculated. For direction of development the percentual division between options is calculated. Standard deviations help to evaluate the validity and reliability of the results.

Ranta and Takala have developed the Index and the result is Critical Factor Index, CFI. This new index takes the standard deviation of expectations also into account. New

factors in the devisor are Importance index, which is the average of importance divided by ten, and Gap Index which measures the gap between expectations and experiences. The attribute get more critical as the Critical Factor Index descends. (Ranta & Takala 2007:319)

$$CFI = \frac{SD \text{ of expectation} * SD \text{ of experience}}{Importance \text{ index} * Gap \text{ index} * Direction \text{ of development index}}$$

Figure 1 - Critical Factor Index (CFI)

2.1 Planning the questionnaire

First step of the used research method was to create the questionnaire that gathers the customer's opinions. Each attribute were evaluated in three different ways: *importance*, *experience* and *direction of development compared over the last year*. Compared to the method created by Ranta and Takala (2007), *comparison to competitors* was not taken into account because respondents did not have realistic knowledge about the competitors' processes. Also, the column *expectations* were changed to *importance*. (Ranta & Takala 2007)

As the purpose of this study is to find out critical part of the pricing process (from customers point of view) it was decided to select the attributes with this in mind. It was also decided to focus on parts of the process that can be affected and improved..

After discussions and brainstorming sessions with the selected experts of the case company the attributer for the questionnaire where chosen. Final decisions about the attributes where made with the Pricing Manager. Attributes were categorized under four main categories: Time, Quality, Usability, and Customer service. Finally, 21 attributes covering all the main categories were selected into the questionnaire.

Time

- Getting prices for products from the configurator
- Getting prices for products that are not in the configurator
- Getting additional information regarding the product
- Quality
- Quality/reliability of the configurator (FI DA products)
- Quality of the product information in the configurator
- Quality of the price information in the configurator
- Simplicity of pricing
- Transfer prices are on the right level (Market price correspond to the main competitor MP's)
- Ability to affect the pricing/change the price (to suite market conditions) if not
- Usability
- Getting a product and it's price to a tender
- It's easy to find what I need from the configurator
- Configurator guides towards right product(variant)
- Ability to give/get discounts
- Ability to give/get a budget price
- Customer service
- It's easy to get help/support if I have a problem
- Communication regarding changes (in prices or configurator)
- Online pricelist with up to date (valid) prices
- Offline pricelist with prices that can be updated manually (by user)
- Pricelist in paper form (pricing must always be check from factory)
- Getting prices for old (restricted) products
- Getting prices for spare parts

2.2 Respondents

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Because majority of case company's employees did not have enough knowledge about the pricing process/sales configurator, it was decided to direct questionnaire to the people who have been working with the tendering tool (CCP). The questionnaire was represented to 27 employees. In order to compare the views and opinions of the different interest groups, the respondents were divided into four groups: Marketing Managers, Area Marketing Managers, Sales Assistants, and Customers.

3 Results

According to all answerers, the most critical factors in process were attributes *Quality 1, Quality 5, Usability 1* and *Usability 4.* These are complete different attributes compared to those that got the worst expectation in the preliminary analysis. In fact, the *Quality 1* was one of the best attributes in the preliminary analysis, but among the worst in CFI analysis. The difference can partially be explained by large standard deviations of the attribute. Critical development targets according to the CFI are related to the usability of the configurator and knowledge of the market prices. Large values are marked with yellow, because they are not always good attributes: they can be over resourced or affected by large standard deviations. Large standard deviations can be sign of a confusion and unclarity around the certain attribute and need to be straightened out.
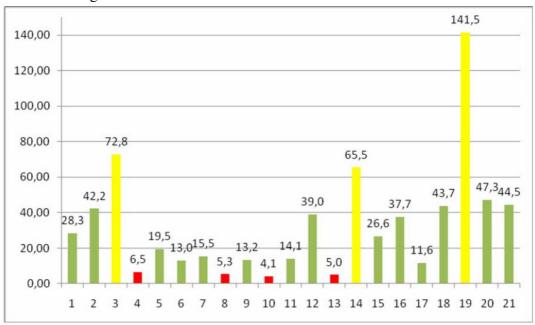

Figure 2 - Critical Factor Index

As critical factor index is analyzed between the groups big differences appear. This is understandable as different groups have different needs and different ways of using the system.

Marketing Managers results contain more noticeable differences between attributes. Two very high spikes, and four low ones. The two highs are technical information about products and communication regarding changes. These highs do not necessarily mean that the attributes are doing well. Managers do not use the technical information available from the system so it has low importance for them. Communication about changes is something that they need but from the open comments and discussions with managers it is obvious that they feel like they are drowning in the information and it's hard to pick out relevant data from the notifications.

Critical values are related to usability and getting prices offline (being tied down to an intranet system). Also time is a major issue and almost all of the respondents from managers group state that overall process to get a price is too complicated and time consuming. Zero value for attribute 15 is caused by zero gap between importance and expectation.
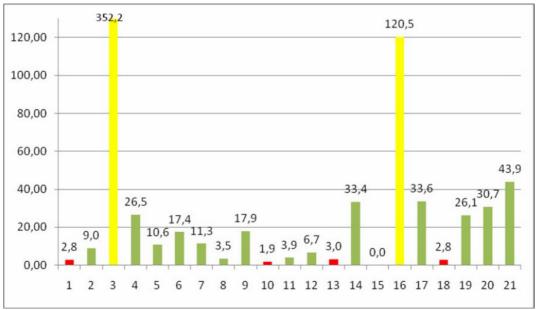
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Figure 3 - CFI for Managers

From assistants results it is interesting to see that atributre *Time 1* got suchs high value. This is (at least partly) caused by the direction of development index (75% answered that direction has been to better). *Time 3* also got a high value . Reasons behind this are same as in the managers case: no use for the feature. *Service7* got the highest value. This attribute relates to spare parts price information and in this case the "extremely" high value is not an indication of overachievement. Recently spare parts were move to Service so assistants do not need to find prices for them anymore. Also Service seems to do a quite good job in providing price information to the factory.

Assistans also have issues with usability, but their problems are related more to the configurator itself (the user interface). Finding the products from the configurator causes lot of work (specially accessories were mentioned to be hard). Finding right variants can also be tricy. This is not common as they usually have an order code from the customer, but if assistants need to configure the product they get lost and this attribute actually got the lowest score. Selections in the configurator might be too technical and the terms different that the customer has specified in the order.

Another critical feature is discount procedure. Importace for this atribute is quite high as it is commonly used. Experience on the otherhand got a low value and respondents commented that the whole system for discounting is too confusing: price changes have to be done manually to several different places and separately for each of the items, also there is no indication of the change which means there's no traceability.

Assistants have several attributes with no values. This is because they could not answers all of the questions as they where not related to their work. For example in the case of attributes *Service4 and 5* value is zero as assistants don't need other ways to get prices as they have allways access to intranet.
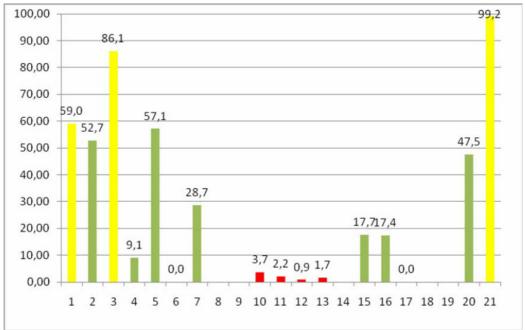
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Figure 4 - CFI for Assistants.

Customers answer are totally different from other groups. High values can be found from Usability and Service. *Usability3* and *5* have very big standard deviations so allthough the experience is not that good CFI is high. *Service5* has an extremely high value for many reasons. First of all the gap index is small and secondly the standard deviation is really high as group customers seems to have very different needs and procedures for pricelists.

Most critical factors are the ability to affect to the pricelist levels, actual discounting in CCP, getting prices online and spare part price information. Ability to affect the prices got a high value in importance but the experience did not match up. Alarming thing here is that many customers feel that the development has been to worse. On the other hand from open comments it was revealed that the ability to effect dependes highly on ones own activity. Issues with discounting are mainly same that the assistants have – no trace of change which can create confusion – customers might not even realice that thei are getting a discount. Development on this attribute has also been to worse as customers feel the discounting process has gotten more complex.

Getting prices online generated probably most of the open commenting from customers. There is a lot of resistance against the system but as the group is being forced to use it importance for it rated high (as it seems to be only way of getting prices in the future). Experience on the other hand is rated low. Comments were as follows: "Too complicated to use.", "Can't expect customers to use a configurator to check a price for one relay as it is just a small part of their buciness.", "Problem with this is that you always have to create a tender to check a price". So from the comments it's obvious that customers are not that happy with the system.

Getting prices for spare part is not quite as critical as the index indicates. Importace for the attribute is high as the group expresses: " if spare parts are needed there almoust always is a urgent issue some where.". Gap between importance and experience is not that great and low value is mainly caused by low deviation in answers.

Some of these differences between customers and respondents inside the factory can be explained by the fact that customers are "on their own". They don't get as much face-to-face support and have to rely mainly on mail or phone in problem situations. This might also explaine the low value that customers gave to getting additional information regarding the product. Factory personnel have all the technical people (Product managers, design engineers etc.) at their reach but customers have to rely on the material they get from the web.
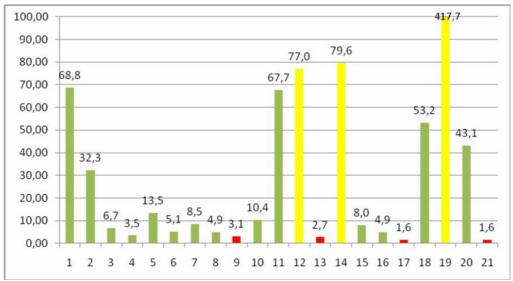
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Figure 5 - CFI for Customers.

4 Conclusion

The purpose of this study was to find out critical areas of development in pricing process, from customer satisfaction point of view, the so called "ease of doing business". That was done by using quantitative questionnaire method, which was directed to the company's employees and customers who have been working with CCP. In addition to the previous similar studies, the respondents were divided into different interest groups in order to compare different viewpoints.

The division into different groups allows different departments to gather more specified information considering their own unit or work group. For example, sales assistants can use their own unit-specific column diagram to identify the criticalities or other significances of their department. However, with breadth comes also the complexity. With large number of different data sheets and diagrams, it is harder to find those absolute development targets.

Examining the averages it is evident that all of the attributes are considered important. Respondents clearly felt that all attributes relating to prices even slightly are critical to the process. Only one attribute stands out with a low importance and it is pricelist in paper form. This is understandable as now days offices are more and more moving towards paperless environment. Specially assistants felt that they do not want anymore paper on their tables.

The result of the study defines the most critical development areas for the whole process, in order of importance. Many development areas where found and all of them cannot be improved simultaneously, but the focus should be on the most critical areas, which are software's usability and the knowledge of TP/MP price levels. Also the high values might need some attending. At least information regarding changes needs some thinking about as so many users felt they are drowning in information.

Attributes have stayed relatively same over the last year. Only two attributes have had some positive development. Overall reliability of the system has grown and the duration it takes to get a product to a tender has decreased. This might be caused by the fact that users are more familiar with the system and have gotten used to the slowness. At the moment there are several improvement under development and it would be worthwhile to do the questionnaire again after some time has passed and the improved features are in use. Also other factories using CCP could benefit from applying the method to their configurators and customers.

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