

Development of a Conceptual Model of Internal Data Source for Measurement of Customer Satisfaction

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Abstract

Traditional CSM approach is performed at certain frequencies. The gap between such events can be termed as a 'blind period', because customer satisfaction is left unobserved and unmanaged. The blind period may sometimes accelerate the growth of customer dissatisfaction. One way to eliminate the impact of the blind period is to reduce the gap between CSM events. The initial assessment indicates that conducting CSM more frequently, may weaken the accuracy of measurement, and increase the cost of the programme. The authors believe that the reason behind these limitations is the use of the external data source, collecting data directly from customer, therefore suggests using the internal data source, as an alternative to measure customer satisfaction. The purpose of this paper is to develop a conceptual model for the internal data source to measure customer satisfaction. To achieve this objective, a conceptual model need to be developed based on three determined steps: define the formation of customer satisfaction value, identify the CSM factors and dimensions, and mirror the CSM instruments to identify the internal performance values. The paper indicates that internal data source could provide researchers with an alternative data source to measure customer satisfaction with minimum limitations on frequency of implementation, accuracy and cost.

Keywords: Customer Satisfaction Measurement, Internal Data Source, External Data Source.

1 INTRODUCTION

Although the basic principles of customer satisfaction are agreed by a wide number of researchers, yet, the practicality of measuring and managing customer satisfaction is still under debate. A number of researchers have questioned the quality of existing CSMs (Reichheld, 1995), and others claimed that current CSM approaches have not proved to be effective (Deming, 1986; Jones and Sasser, 1995; Stewart, 1997; Reichheld, 2003). In practice, the CSM process defines the objectives and the requirements of the CSM programme. One of these requirements is defining the frequencies (fixed intervals) of the process. The gap between events can be termed a 'blind period,' because customer satisfaction is left unobserved and unmanaged. In some cases, the blind period ranged up to a year or even longer; for example, the American Customer Satisfaction Index (ACSI) is designed with a one-year interval (ACSI, 2004). The blind period may sometimes accelerate the growth of customer dissatisfaction more rapidly, without giving any indication or warning to the organisation. According to Zairi (2000a, 2000b), satisfied customers are more likely to share their experiences with five or six others people, whereas dissatisfied customers are more likely to tell ten others people of their

unfortunate experience. This form of dissatisfaction could negatively influence customer retention if it is not handled on time. One way to eliminate the impact of the blind period is to reduce the gap between the CSM intervals and conduct the CSM more frequently on dynamic basis. However, the initial assessment of the research indicates that conducting the traditional CSM more frequently may weaken the accuracy of the measure, and increase the cost of running the programme over the effective budget. Accordingly, it is recognised that the reason for these limitations is the use of the external data source, collecting the data directly from customers, which suggests looking into other alternative data sources. The internal data source is therefore suggested as an alternative for this research.

The internal data source is designed based on the theory that considers the value of customer satisfaction (CS) as the ratio of customer perception (CP) over customer expectation (CE), and summarised in the formula ($CS = CP / CE$) (Lee et al., 2004). Customer expectation value is accumulated inside the customer's mind by three different means of knowledge: customer value, background, and market standard. This means that measuring customer expectation could be possible only by approaching the customers directly, while the customer perception value is formed by customer interpretation based on a direct experience with the organisation (Lin et al., 2001). Tentatively, this means that what is perceived by customers is based on the organisation internal performance (IP), and may be summarised as ($CP = IP$). However, the literature have reviewed many correlation links between factors and dimensions of customer satisfaction and organisation internal performance, such as employee satisfaction (Meisinger, 2003; Homburg and Stock, 2005). Theoretically, measuring these performance values may provide the research with an alternative data source that may facilitate measuring the customer satisfaction.

The objective here is to develop a conceptual model for the internal data source to measure customer satisfaction. The adopted indicators of the internal data source have to be validated by high correlation with existing research in the literature. To achieve this objective, a conceptual model will be developed based on three determined steps:

1. Define the formation of customer satisfaction value.
2. Identify the CSM factors and dimensions.
3. Mirror the CSM instruments to identify the internal performance values.

2 FORMATION OF CUSTOMER SATISFACTION VALUE

The research is based on the theory that considers the value of customer satisfaction (CS) as the ratio of customer perception (CP) to customer expectation (CE), and summarised in the formula ($CS = CP / CE$) (Lee et al., 2004). The relevant literature believes that customer satisfaction is a cycle model, which means components can be located before and after the customer satisfaction component, as driver or outcome, for example the relationship between Customer Satisfaction and Loyalty can be looked at from both sides. Customer Satisfaction is directly related and a driver of Loyalty (McAlexander et al., 2003). At the same time, Loyalty is indirectly related and a driver of Customer Satisfaction, by driving the Expectation value that eventually drives the value of Customer Satisfaction in future purchase (Compton, 2004). Guo et al. (2004) also observed evidence of a lagged effect link between customer satisfaction and profitability. In other words, past customer satisfaction value has a positive effect on current profitability, and similarly, past profitability affects current customer satisfaction value.

The model of the formation of customer satisfaction value (Figure 1) is developed on a time events basis, with six stages representing the actual sequence of time customers go through. These stages can be summarised as follows: Stage 1: the expectation stage which includes the customer expectation development; Stage 2: the perception stage represents the time customer is getting engaged with the

organisation to absorb the performance, and includes three main customer satisfaction factors, namely: product, price and service, each of which will have several dimensions representing their characteristics; Stage 3: the assessment stage where customer perception value is weighted against the customer expectation value to determine the level of customer satisfaction value; Stage 4: the customer satisfaction stage includes three components representing the level of customer satisfaction; Stage 5: the reassessment stage is the time when the customer is no longer engaged in the organisation and start to reevaluate his/her satisfaction level based on the market standard and experience; and Stage 6: the retention stage is the final stage of the model when the customer chooses to be loyal or switch to other competitors. The following discussion will go into detail on each stage of the life cycle.

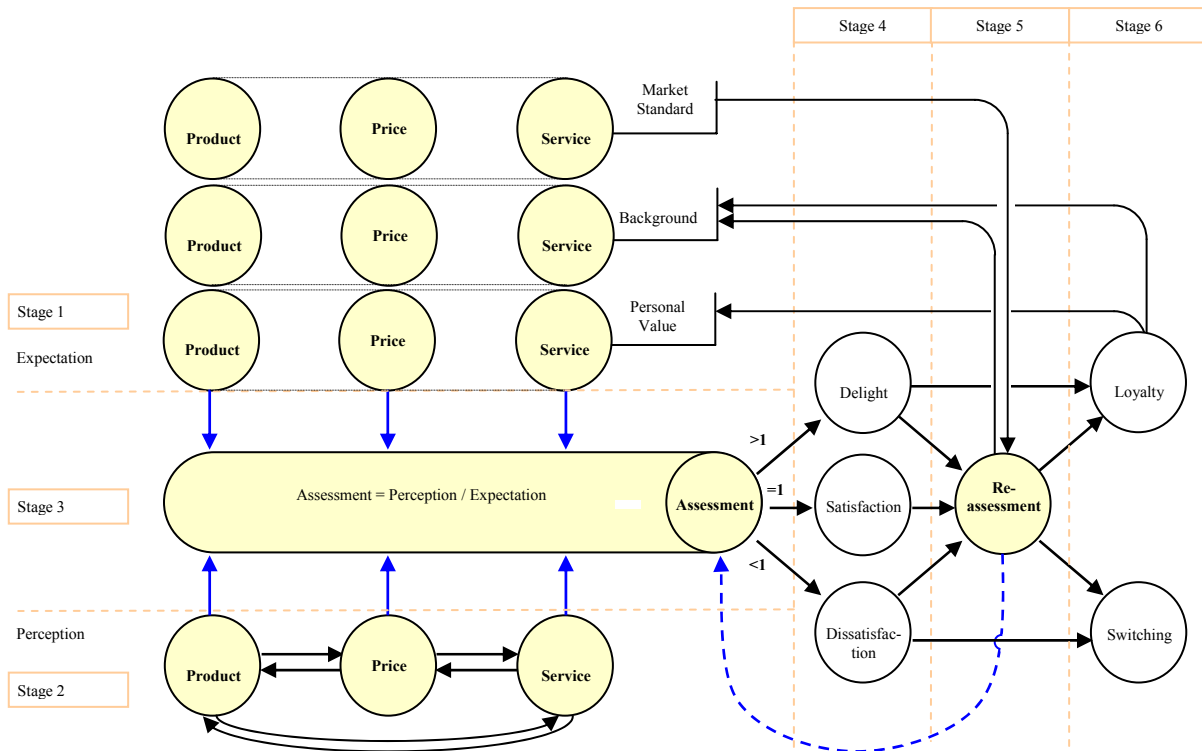


Figure 1. Model of Formation of Customer Satisfaction Value

3 IDENTIFY CSM FACTORS AND DIMENSIONS

As defined earlier on the formation of customer satisfaction value, customer satisfaction is composed by three main factors: product, price, and service (Das et al., 1999; Juhl et al., 2002; Chakrapani, 1998). Each of these factors is developed by several dimensions representing their characteristics. The value of any factors and dimensions are measured by observing multiple instruments. The surveys questions are identical to those used in the reviewed models.

Product is one of the main customer satisfaction factors, defined as a commodity of goods or services that is produced or displayed by an organisation, and offered for sale or hire for a specific value of money. The value of product is driven by eight dimensions: durability, serviceability, reliability, conformance, performance, perceived quality, aesthetics and features (Garvin, 1984; Drew and Lyons, 1986; Juran, 1986; March, 1994; Sower et al., 2001). Yet Garvin (1984) considers only two dimensions: perceived quality and aesthetics, as a dimension of product from a customer view. Price is one of the main customer satisfaction factors, defined as the value of the commodity the customer is

required to pay to receive the product. The value of price is driven by three dimensions: price-quality, price-competitor, and price-expectation (Juran, 1986; Friedman and Lewis, 1999). Service is one of the main customer satisfaction factors, defined as the system or the operation which customer goes through to receive the product. The value of service is driven by eight dimensions: reliability, assurance, access, communication, responsiveness, courtesy, empathy, and tangibles ("Service Industries," 1989; De Toni et al., 1994; "Measuring the dimensions," 1996; Brown, 1997; Caruana and Pitt, 1997; Cooke, 1998; Homburg and Garbe, 1999; Clemes et al., 2001; Sower et al., 2001; Yang et al., 2003). However, Parasuraman et al. (1988) squeeze the eight dimensions into only five: tangibles, reliability, responsiveness, assurance and empathy.

However, based on the first stage of the basic CSM process, market segmentation, the research will be designed to focus on an existing regular product in a specific time frame. This means assuming that the product and price of the customer satisfaction factors are constant for the period of the research. Therefore, the research model (Figure 3.6) will be structured with a single dimension for the product and the price factors, whereas service factors will be structured using the SERVQUAL dimensions. However, the research hypothesises that the value of the customer perception is based on customer evaluation of the organisation internal performance. Therefore, the research is required to explore these values by a mirroring process.

4 MIRRORING CSM INSTRUMENTS

The discussion of the formation of customer satisfaction value and the identification of CSM factors and dimensions should have provides an overview of the origin and source of the customer perception value. This is formed, as mentioned earlier, by customer interpretation based on a direct experience with the organisation (Lin et al., 2001). Several reports in literature have discussed the relationship between factors and dimensions of customer satisfaction and internal performance values, such as employee satisfaction (Meisinger, 2003; Homburg and Stock, 2005). This work proposed focus on these internal performance values that are related to the factors and dimensions of the research model developed earlier. The research will use a mirroring technique to explore the CSM instrument to identify the internal performance indicators. The findings of this process are summarised in the following table (Table 1).

5 RESEARCH MODEL (INTERNAL DATA SOURCES)

Customer satisfaction depends on how well an organisation delivers quality products, price and services to the external customers; however, the research model focuses on the service quality to identify its internal data source indicators. Based on the idea of the mirroring process of the external instruments, the performance of the service quality depends on three aspects: delivery time rating, employees' capability, and employees' willingness in performing the service quality (Figure 2). The latter will depend on six performance indicators: product failure rate, price competitor gap, deliver time rating, employees satisfaction, employee personality and employee knowledge. Each of these aspects has to be assessed to come up with a figure that correlates with overall customer satisfaction value. However, previous researches have already proved the correlations between external customer satisfaction and the other internal indicators: employees' satisfaction, employees' knowledge, employees' personality, and delivery time rating. The following discussion will cover each indicator in detail:

5.1 Product Failure Rate

The mirroring process of the product reliability dimension indicates that the instrument is intended to measure the customer perception concerning the product reliability rating of the product in performing free from defects for the life period of the product. Therefore, the value of product reliability will be assessed by measuring the product failure rate indicator. The links between external customer

satisfaction and product reliability have been fairly researched in the literature. Many studies provide a high correlation between the two factors (Churchill and Surprenant, 1982; Anderson and Sullivan, 1993; Taka and Abe, 1994; Baziuk, 1995; Goffin, 1998). The value of product failure rate is reversely related to the overall value of customer satisfaction.

	<i>External Source (Customer Perception Values)</i>	<i>The Internal Source</i>
	Product	
	Satisfy with overall product received.	Product Failure Rate
	Price	
	Satisfy with overall price charged.	Price-Competitor Gap
	Service	
	1. Reliability	
S1	Employees deliver service at the right time.	Delivery Time Rating
S2	XYZ is dependable.	Assumed Constant
S3	Employees show sincere interest in solving the problem.	Employee Personality
S4	Employees, when promises are made, they do so	Employee Personality
S5	XYZ keeps its records accurately	Assumed Constant
	2. Responsiveness	
S6	Employees tell exactly when services will be performed	Employee Knowledge Employee Personality
S7	Employees able to provide prompt service	Employee Personality Delivery Time Rating
S8	Employees always willing to help	Employee Personality
S9	Employees never too busy to respond to request	Employee Personality
	3. Assurance	
S10	Employees have knowledge to answer any question about services	Employee Knowledge Employee Personality
S11	Employees makes you trust the organisation	Employee Personality
S12	Employees are polite and treats you with respect	Employee Personality
S13	Make you feel safe and comfortable when you talk with them	Employee Knowledge Employee Personality
	4. Empathy	
S14	Employees gives individual attention	Employee Personality
S15	Employees gives personal attention	Employee Personality
S16	Employees have your best interests at heart	Employee Knowledge Employee Personality
S17	Employees understand your specific needs	Employee Knowledge Employee Personality
S18	XYZ operates at convenient hours.	Assumed Constant
	5. Tangibles	
S19	XYZ has up-to-date equipment	Assumed Constant
S20	XYZ physical facilities are visually appealing	Assumed Constant
S21	XYZ employees are well dressed and appear neat	Assumed Constant
S22	XYZ physical facilities appear in keeping with the type of services provided	Assumed Constant

Table 1. Summary of the Mirroring Process

5.2 Price Competitor Gap

The mirroring process of the price competitor dimension indicates that the instrument is intended to measure customer perception of price quality compared to other competitors in the same region with the same product. Therefore, the value of the price competitor will be assessed by measuring the price competitor gap indicator. The links between the external customer satisfaction and the price-

competitor have been researched to some extent. A number of researchers believed that significant competitor price tolerance may encourage customers to stop dealing with the firm or switch to a competitor (Gray et al., 1998; Ittner and Larcker, 1998; Gronholdt et al., 2000). Many studies prove a relatively high correlation between the two factors (Fornell, 1992; Johnson et al., 1995; Gray et al., 1998; Ittner and Larcker, 1998;; Wiele et al., 2002). The value of price competitor gap is reversely related to the overall value of customer satisfaction.

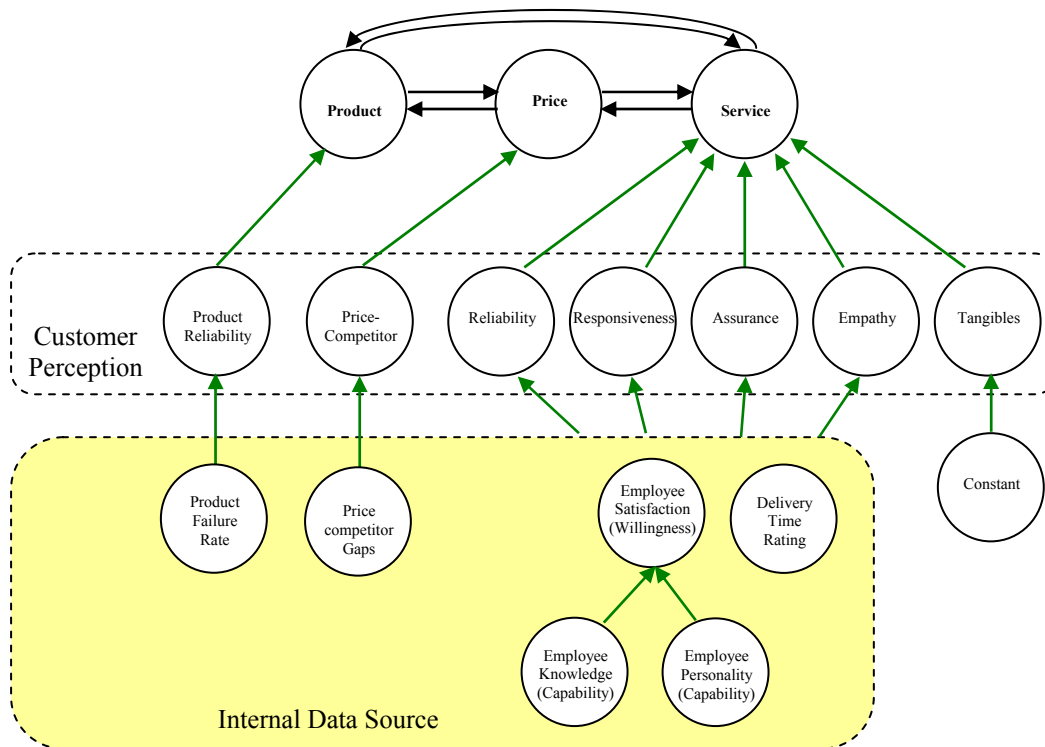


Figure 2. Research Model

5.3 Delivery Time Rating

A major concern for service managers is to counteract negative effects of waiting. The effects of perceived waiting time and customer satisfaction have been justified. In a study of examining the dependability of waiting time and patient satisfaction in an emergency hospital, the results concluded that the patients whose perceived waiting time to see a doctor was shorter than expected were more satisfied than patients whose waiting time was as expected or longer than expected (Thompson et al., 1996). In another study, Pruyn and Smidts (1998) found that waiting appears to influence satisfaction quite strongly. However, the adverse effects of waiting can be soothed more effectively by improving the attractiveness of the waiting environment than by shortening the objective waiting time. Additionally, Tom and Lucey (1995) describe a laboratory study which tested the effect of customer time attributions on customer satisfaction, both with the checker and with the store. Tests were carried out for situations where the perceived waiting time was longer than expected, and for situations where it was shorter. The findings indicated the significant effect of customer attribution. The study, concludes that customer satisfaction/dissatisfaction is dependent not only on perceived waiting time, but also on customer identification of the causes, as well as stability and control of the causes.

5.4 Employees' Satisfaction

The links between external customer satisfaction and employees' satisfaction have been widely researched. Many studies prove a high correlation between the two factors (Tompkins, 1992; Das et al., 1999). In one case study, a longitudinal analysis of satisfaction and performance was conducted for a national chain of fast-food restaurants. A total of 342,308 consumer responses, 3,009 employee responses, and 12 months of restaurant performance measures were analysed. The study provides evidence of a positive and significant relationship between customer satisfaction and employee satisfaction in any one given time period (Bernhardt et al., 2000).

Meisinger (2003) believes that it is equally important in the delivery of services to the employees, because they inevitably influence the experience of the external customers, and consequently the bottom line. Meisinger research was talking about HRM use of internal marketing to raise customer satisfaction of employees, which can affect the performance of the staff and the customer orientation. In addition, Harter et al. (2005) examine the relationship at the business-unit level between employee satisfaction-engagement and the business-unit outcomes of customer satisfaction, productivity, profit, employee turnover, and accidents. The study was based on data collected from 7,939 business units in 36 companies. They found the relationships between unit-level employee satisfaction-engagement and these business-unit outcomes are large enough to have substantial practical value. They propose that changes in management practices that increase employee satisfaction may increase business-unit outcomes, including profit.

5.5 Employees' Knowledge

For practical use, it is also important to know the details of the services and background of the product quality. The correlation value between customer satisfaction and employees' knowledge has been relatively justified. For instance, Das et al. (1999) suggest that employees are strategic resources in differentiating one service provider from another, and proved the dependability of service quality on employees' contextual knowledge. Furthermore, Mercer Human Resource Consulting report (2003), 92% of surveyed CFOs believe human capital management, managing a workforce's knowledge, skills and experience, has a great effect on an organisation's ability to achieve customer satisfaction.

5.6 Employees' Personality

There are numerous researches that investigated customer satisfaction and employee interaction during service encounters, and whether the relationships between customer personality traits and quality of the employee's service delivery will impact on the customer's participation, satisfaction, and repurchase intentions. For example, John (2003) researched this correlation, and the results indicate that components of technical and functional quality inputs into the service creation and delivery, and personality trait differences, can have varying impacts upon the overall service quality evaluations of customers, their generalised satisfaction with service encounters, and their repurchase intentions. In addition, Lin et al. (2001) examined the relationship between the personality of the service providers and the service quality performance they provide, based on the five-factor model of personality and the SERVQUAL model of service quality. The finding indicates a correlation between the two factors: openness correlated with assurance, conscientiousness with reliability, extraversion with responsiveness, and agreeableness with both empathy and assurance.

6 SUMMARY AND CONCLUSIONS

The objective of this paper was a development of a conceptual model of the internal data source for measurement of customer satisfaction. The adopted indicators of the internal data source had to be justified with high correlation coefficient rate by existing research in the literature. The attempt was accomplished by adopting three determined steps: define the formation of customer satisfaction value, identify the CSM factors and dimensions, and mirror the CSM instruments to identify the internal

performance values, namely: product failure rate, price-competitor gap, delivery time rating, employees' satisfaction, employees' personality and employees' knowledge.

For justification, the conceptual model was presented in a pilot case study to customers and employees of adopted company. The model was adjusted to fit the scope of customer satisfaction for this specific case study. Even though, the three main factors of customer satisfaction: product, price, and service remain the same for this case study and should for any other; still, the importance weights of these factors and the detailed dimensions should be different.

Future development of this research need to validate this conceptual model by conducting two data collection from the case study company: external data from customers via traditional CSM survey and internal data from employees via specific employees survey, in addition to calculating some operational values. These need to be conducted simultaneously to validate the accuracy of measurement of adopting such approach.

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