

Measuring Customer Satisfaction with Service Quality Using American Customer Satisfaction Model (ACSI Model)

Biljana Angelova

Full Professor at Ss Cyril and Methodius University, Economic Institute, Prolet nr 1, Skopje-Macedonia; E-mail: angelova@ek-inst.ukim.edu.mk ; Mob: ++389 70 234 360

Jusuf Zekiri

Assistant Professor at South East European University, Business and Economics Faculty, Ilindenska nn, Tetovo-Macedonia; E-mail: j.zekiri@seeu.edu.mk ; Mob: ++389 76 403 313.

DOI Link: <http://dx.doi.org/10.6007/IJARBSS/v1-i1/100>

Published Date: 13 October 2011

Abstract

Service quality and customer satisfaction are very important concepts that companies must understand if they want to remain competitive and grow. In today's competitive environment delivering high quality service is the key for a sustainable competitive advantage. Customer satisfaction does have a positive effect on an organization's profitability. Satisfied customers form the foundation of any successful business as customer satisfaction leads to repeat purchase, brand loyalty, and positive word of mouth.

The aim of this research was to apply the ACSI model in the context of service quality in the Macedonian mobile telecommunication industry in order to describe how customers perceive service quality and whether they are satisfied with services offered by T-Mobile, ONE, and VIP (three mobile telecom players). A structured questionnaire was developed from the ACSI model and was randomly distributed to the users of the three mobile operators to determine their satisfaction with service quality delivery in the Macedonian mobile telecommunication market. From the analysis carried out, it was found out that the overall service quality perceived by the customers was not satisfactory, that expectations were higher than perceptions. Customers were not satisfied with service. The results and findings will provide extra information concerning customers' needs, wants and their satisfaction. It will also contribute to research since this study sets the ground for further research in measuring service quality in the service industries in Macedonia.

Keywords: ACSI Model, Customer, Service, Satisfaction, Retention, Loyalty.

1. Introduction

In today's competitive environment delivering high quality service is the key for a sustainable competitive advantage. Customer satisfaction does have a positive effect on an organization's profitability. Satisfied customers form the foundation of any successful business because customer satisfaction leads to repeat purchases, brand loyalty, and positive word of mouth. There are numerous studies that have looked at the impact of customer satisfaction on repeat purchases, loyalty and retention. Many researchers point out the fact that satisfied customers share their experiences with other people to the order of perhaps five or six people. On the contrary, dissatisfied customers are more likely to tell another ten people of their experience with product or service.

Customer satisfaction is the outcome felt by those that have experienced a company's performance that have fulfilled their expectations. Many researchers and academicians highlight the importance of customer satisfaction. Many researchers see that customer satisfaction has a positive effect on organization's profitability. Much empirical evidence also shows the positive connection between customer satisfaction, loyalty and retention. Nowadays all companies are realizing the significance of delivering and managing service quality, which leads to customer satisfaction. Service quality that is delivered can meet or exceed customers expectations are mainly influenced by customer's prior expectations.

According to Hansemark and Albinson (2004) "satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some needs, goals or desire ". Customer loyalty on the other hand refers to a deeply held commitment to re-buy a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behavior (Oliver, 1997).

In order to fulfill the research on measuring and evaluating customer satisfaction towards customer service provided at the three mobile telecommunication companies, ACSI for measuring the overall satisfaction was chosen. These measurement models are used because their use is appropriate and corresponds to the research problem. ACSI is used to measure overall customer satisfaction with service delivery because it combines responses to three questions that ask about the same idea, i.e., overall satisfaction. It is also relatively easy to apply as the weight of each response can be determined by the researcher irrespective of which industrial context it is used.

2. Factors that Influence Customer Satisfaction

From literature review, there are many factors that affect customer satisfaction. Such factors include friendly employees, courteous employees, knowledgeable employees, helpful employees, accuracy of billing, billing timeliness, competitive pricing, service quality, good value, billing clarity and quick service (Hokanson, 1995).

From the studies carried out in many countries, factors like: service quality, and perceived value, are the key constructs affecting the customer's satisfaction with mobile services. Studies also point out that customer satisfaction results ultimately in trust, price tolerance, and customer loyalty. Therefore, building customer relationship is a backbone for all organizations in general, and companies in service industries in particular. Issues like: customer satisfaction, service quality, customer perception, customer loyalty, are the main concerns of the nowadays service companies, which improves organization's performance and translates into more profits.

2.1 Customer Relationship Marketing

Customers are very different nowadays, because of their exposure to information, they are better educated, and more demanding in the products and services they require, and they are more familiar with technology. The 21st century consumer market raises many questions to those businesses that need to respond to this new era of consumerism. Customer Relationship Marketing is a practice that includes all marketing activities directed toward establishing, developing, and maintaining successful customer relationships. Building and maintaining relationships with customers has become a key strategic point with service industries. Therefore, relationship marketing develops long-term relationships and improves corporate performance through customer loyalty and customer retention.

A research conducted by Reichhold and Sasser (2002) of the Harvard Business School showed that, most customers are only profitable in the second year that they do business with you. Companies spend money on advertising and marketing and finding out about what customers want in order to satisfy their needs and requirements. Managers can use relationship management (CRM) as the single strongest weapon to ensure that customers become and remain loyal.

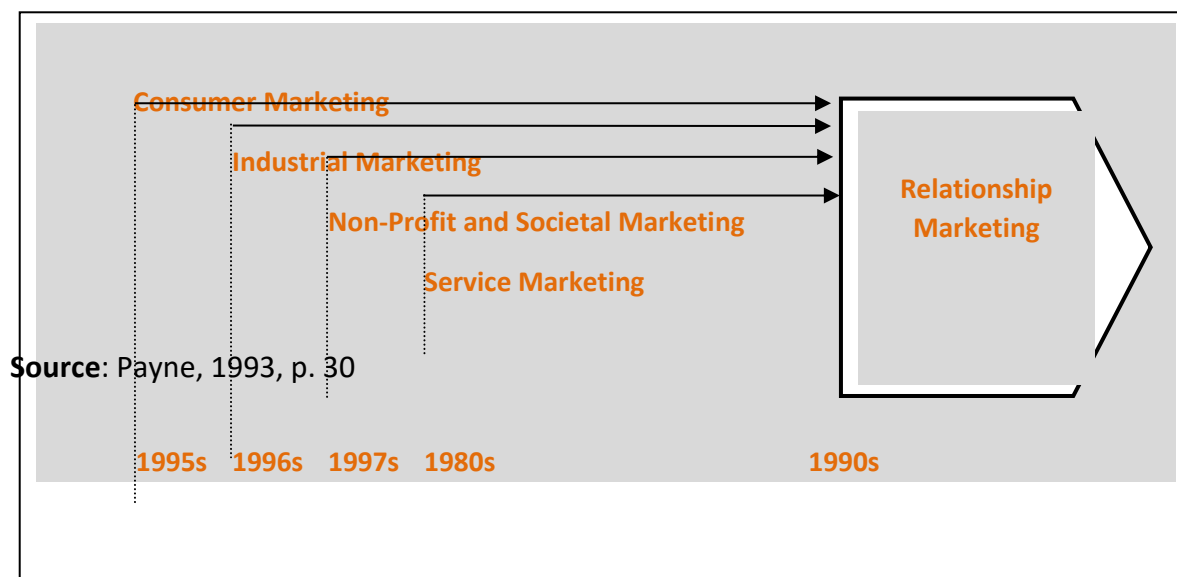
In the literature review concerning relationship marketing there are some definitions by some scholars.

Berry (1986) thinks that *"Relationship marketing is the attraction, maintaining and enhancing customer relationships. The marketing mind set is that the attraction of new customers is merely the first step in the marketing process"* (pp 47-51).

Gronroos (1994) defined it: *"Relationship marketing is to identify and establish, maintain and enhance relationships with customers and other stakeholders, at a profit, so that the objectives of all parties are met; and that this is done by mutual exchange and fulfillment of promises"* (pp. 4-21). Relationship marketing is an approach that leads to a trusting rapport between the parties involved in business. It is not only important to get customers and create transactions, but also maintaining and enhancing ongoing relationships.

Relationship Marketing has evolved from other marketing aspects and it has the potential to draw together the various streams of marketing into one as a whole (Payne, 1993). Figure 1 shows the evolution and development of Relationship Marketing.

Figure: 1: The Changing Emphasis on Marketing



Since the early 1990s, academics and consultants have promoted the idea that marketing practice should focus upon identifying and serving the organization's best customers and prospective customers. In other words, they support the effectiveness versus efficiency argument.

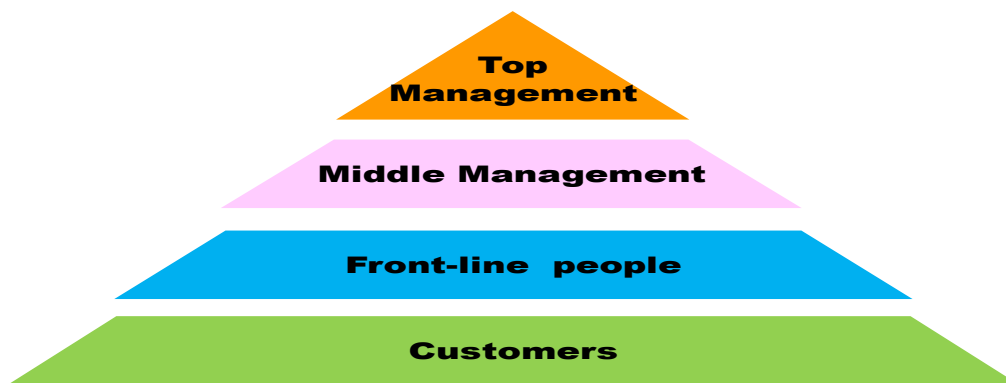
Reichheld and Sasser (1990) demonstrated that even a small increase in customer retention produced a dramatic and positive effect on profitability. Increasing the customer retention rate from, say, 85 per cent to 90 per cent represented a net present value profit increase from 35 per cent to 95 per cent among the businesses they examined. Payne and Frow (1996) researched 225 UK organizations and found that 41 per cent of the typical marketing budget was spent on acquiring customers and only 23 per cent on retaining them.

Companies shouldn't necessarily seek to retain all their customers, because some may cost too much to service. They should look at the customer lifetime value (CLV), which is defined as the net present value of the future profit flow over a customer's lifetime (Knox et al. 2003). Furthermore, efficiency-driven firms focus on the products and services they sell, and they seek competitive advantage in scale, experience and creating barriers to entry (Knox et al. 2003). Effective firms focus on their ability to understand and fulfill individual customers' most important needs. Effective firms seek competitive advantage in customer involvement, service and superior knowledge of customer motivations and behavior. Thus, moving from efficiency to effectiveness represents a big shift in business emphasis, and is one of the drivers behind the surge of attention and investment in CRM (Knox et al. 2003). Creating customer value is a major source of competitive advantage for organizations. The value the customers receive derives from the total experience they have with both the core product and the product surround. In fact, customers are not buying goods or services, but specific benefits, which solve problems. They value the offer according to their perception of its ability to solve their problem (Knox et al. 2003).

2.2 Customer Satisfaction

Customer Satisfaction has been a central concept in marketing literature and is an important goal of all business activities. Today, companies face their toughest competition, because they move from a product and sales philosophy to a marketing philosophy, which gives a company a better chance of outperforming competition (Kotler, 2000). Overall customer satisfaction translates to more profits for companies and market share increase. The importance of customers has been highlighted by many researchers and academicians. The principal concern of marketing is to connect with customers by building a strong customer relationship in order to meet their expectations. Therefore, managers who see customers as the only way of profit, they consider the traditional chart in Figure 2 a pyramid with the president at the top, management in the middle, and front-line people and customers at the bottom.

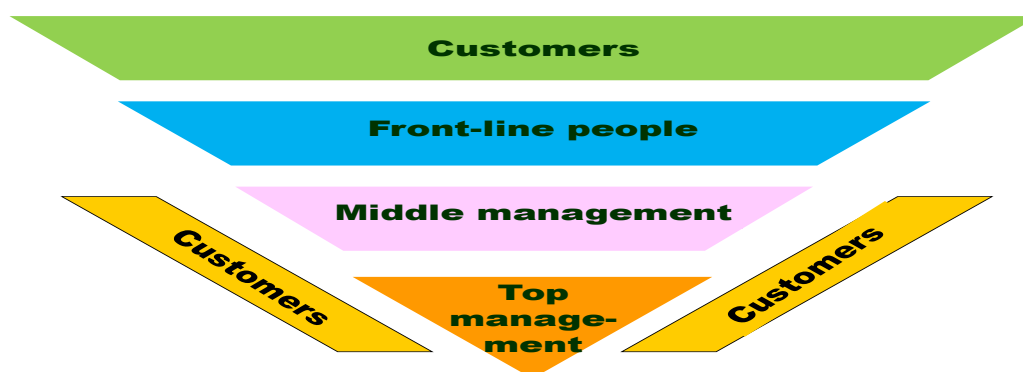
Figure : 2 Traditional Organizational Chart



Source: Kotler et al. (2000)

Companies that pretend to be successful invert the chart, like figure 3. At the top are customers, next according to the importance are front-line people who meet, serve, and satisfy customers, under them are middle managers, whose job is to support the front-line people so they can serve customers well, and at the base is top management, whose job is to hire and support good middle managers. For customer-centered companies, customer satisfaction is both a goal and a marketing tool. Therefore, companies need to be concerned about the customer satisfaction level, because of the internet technology which enables the quick spread of bad word of mouth marketing, as well as good word of mouth to the rest of the world.

Figure: 3 Modern Customer-Oriented Organization Chart



Source: Kotler et al. (2000)

Researchers have tried to define customer satisfaction and in general they have defined it as transaction process. Oliver (1981) defined satisfaction “as a summary of psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience” (pp. 24). Kotler (2000) defined satisfaction as: “a person’s feelings of pleasure or disappointment resulting from comparing

a product perceived performance (or outcome) in relation to his or her expectations". According to Hansemark and Albinsson (2004) "satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some need, goal or desire".

Furthermore, researchers differentiate between attitude and satisfaction. So an attitude is a perceived service quality whereas, satisfaction is related to a specific transaction.

Oliver (1981) summarizes the transaction-specific nature of satisfaction, and differentiates it from attitude, as follows: Attitude is the consumer's relatively enduring affective orientation for a product, store, or process (e.g., customer service) while satisfaction is the emotional reaction following a disconfirmation experience which acts on the base attitude level and is consumption-specific.

Parasuraman et al. (1988) distinguish service quality and satisfaction: "perceived service quality is a global judgment, or attitude, relating to the superiority of the service, whereas satisfaction is related to a specific transaction". Customer satisfaction as an attitude is like a judgment following a purchase act or based on series of consumer-product interactions (Yi, 1989).

Customer satisfaction has a positive effect on an organization's profitability. The more customers are satisfied with products or services offered, the more are chances for any successful business as customer satisfaction leads to repeat purchase, brand loyalty, and positive word of mouth marketing. Customer satisfaction leads to repeat purchases, loyalty and to customer retention (Zairi, 2000).

Satisfied customers are more likely to repeat buying products or services. They will also tend to say good things and to recommend the product or service to others. On the other hand dissatisfied customers respond differently. Dissatisfied customers may try to reduce the dissonance by abandoning or returning the product, or they may try to reduce the dissonance by seeking information that might confirm its high value (Kotler, 2000).

Companies need to develop strategies of how to handle dissatisfied customers. Businesses cannot afford under any condition to lose customers, because the cost of replacing the lost customer with a new customer is bigger. Therefore, companies must find ways of winning back the unsatisfied customers by designing special programs for service recovery. Companies should handle customer complaints with care and not seeing them as a time consuming.

2.3 Customer Expectations

Expectations play an important role in the satisfaction formation. The extent to which a product or service fulfills a customer's need and desire may play an important role in forming feelings of satisfaction because of the impact of confirmation or disconfirmation that have on satisfaction.

Consumers expect to be delivered quality products and services; therefore companies try to offer quality products and services. The term expectations really matters to companies because they want to know what customers' expectations are. The term "expectations" has

different uses, in the satisfaction literature, it is viewed as a prediction made by a consumer about what is likely to happen during an exchange or transaction. According to Oliver (1981) "... expectations are consumer-defined probabilities of the occurrence of positive and negative events if the consumer engages in some behavior" (pp.25-48).

In the contrast, in the service quality literature it is defined as desires and wants, what a service provider should offer rather than would offer. Customers form their expectations from their past experience, friends' advice, and marketers' and competitors' information and promises (Kotler, 2000). Therefore, perceived service quality is viewed as the difference between consumers' perceptions and expectations for the service provided. Organizations in order to keep expectations from rising, they have to perform services properly from the first time (Parasuraman et al. 1988). Thus, customer expectations for the service are likely to rise when the service is not performed as promised. Expectations serve as reference points in customer's assessment of performance (Cronin & Taylor, 1992). Thus, retailers can increase customer satisfaction by decreasing customer expectations.

2.4 Customer Perception

Perception is an opinion about something viewed and assessed and it varies from customers to customers, as every customer has different beliefs towards certain services and products that play an important role in determining customer satisfaction. Customer satisfaction is determined by the customers' perceptions and expectations of the quality of the products and services. In many cases, customer perception is subjective, but it provides some useful insights for organizations to develop their marketing strategies. Providing high level of quality service has become the selling point to attract customer's attention and is the most important driver that leads to satisfaction. Therefore, customer perception and customer satisfaction are very closely linked together, because if the perceived service is close to customer's expectations it leads to satisfaction. Satisfied customers provide recommendations; maintain loyalty towards the company and customers in turn are more likely to pay price premiums (Reichheld, 1996).

2.5 Customer Loyalty

Customer loyalty is a crucial factor in companies' growth and their performance. Loyalty is linked with the repeat business. Thus, a customer is loyal when he is frequently repurchasing a product or service from a particular provider. Oliver defines loyalty as "A deeply held commitment to re-buy or re-patronize a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behaviour" (cited by Kotler, 2000).

The perceived value from the product and the service affects customer judgement about his/her satisfaction or loyalty with the product or the service. The significance of customer loyalty is that it is closely related to the company's continued survival and to strong future growth (Fornell, 1992). Customers that are very satisfied with a company are very likely to remain with that company that leads to future revenue for the company. It is now a widely accepted business theory that customer retention optimizes profitability; the cost of acquiring new customers is higher than the cost of retaining existing customers. Therefore, the aim of a service company is to satisfy their customers in order to stimulate them to retain and to repeat their service purchase.

3. Customer Satisfaction Models

Companies try to maintain their loyalty with their customers by improving product and service quality. As a result in the last decade, many national indices have been developed in order to measure consumer satisfaction across a wide range of organizations. Thus, at the national level, the customer satisfaction index (CSI) is used to measure companies and organizations how they satisfy customers' needs. The CSI's model can be also used for comparing services and products within an industry. Most countries have set their own customer satisfaction indices to measure customer satisfaction and the business performance of companies and organizations. The first truly national customer satisfaction index was the Swedish Customer Satisfaction Barometer, or SCSB, developed in 1989. The SCSB includes 31 major Swedish industries. The original Swedish Barometer used perceived value and a single measure of customer expectations (Fornell, 1992). In Germany, the Deutsche Kundenbarometer, or DK, was introduced in 1992 and as of 1994 also includes 31 industries.

3.1 American Customer Satisfaction Model

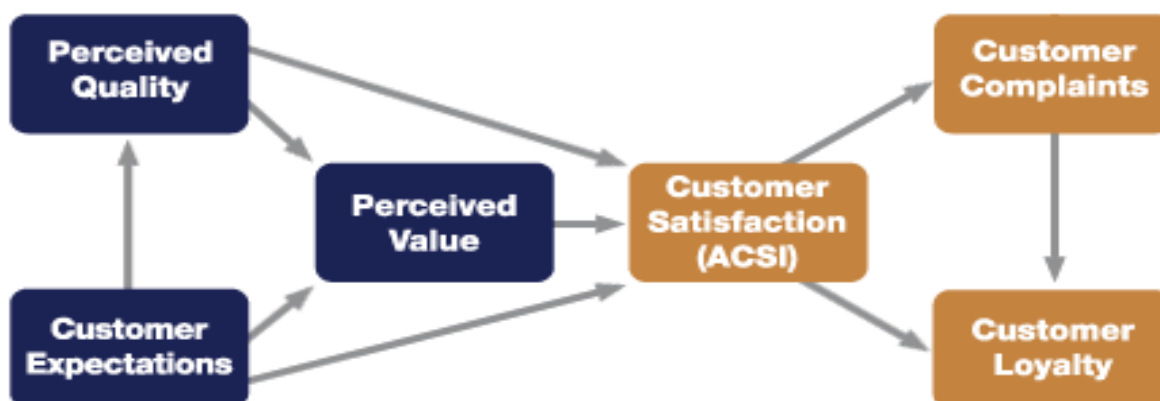
The American Customer Satisfaction Index (ACSI) is the national indicator of customer evaluations of the quality of goods and services available to U.S. residents since 1994. It is the only uniform, cross-industry and government measure of customer satisfaction. It produces indices of satisfaction, its causes and effects, for seven economic sectors, 39 industries, 200 private sector companies, two types of local government services, and the U.S. Postal Service. The Customer Satisfaction Index is a weighted average of three questions. The questions are answered on a 1-10 scale and converted to a 0-100 scale for reporting purposes. The three questions measure: *Overall satisfaction, Satisfaction compared to expectations, and Satisfaction compared to an 'ideal' organization.*

3.2 ACSI Methodology

The ACSI model is a cause-and-effect model with indices for drivers of satisfaction on the left side (customer expectations, perceived quality, and perceived value), satisfaction (ACSI) in the center, and outcomes of satisfaction on the right side (customer complaints and customer loyalty).

The indexes (shown in the diagram below) are multivariable components measured by several questions that are weighted within the model. The questions assess customer evaluations of the determinants of each index. Indexes are reported on a 0 to 100 scale. The survey and modeling methodology quantifies the strength of the effect of the index on the left to the one to which the arrow points on the right. These arrows represent "impacts." The ACSI model explains customer satisfaction (ACSI) on customer loyalty. Looking at the indexes and impacts, users can determine which drivers of satisfaction, if improved, would have the most effect on customer loyalty.

Figure: 4 ACSI Model



Source: www.theacsi.org

ACSI Antecedents

Figure 4 show that overall customer satisfaction (ACSI) has three antecedents: perceived quality, perceived value, and customer expectations.

Perceived Quality is the first determinant of overall customer, which is the served market's evaluation of recent consumption experience, and is expected to have a direct and positive effect on overall customer satisfaction. Space

Perceived Value is the second determinant of overall customer, or the perceived level of product quality relative to the price paid. Perceived value is a measure of quality relative to price paid. Although price is often very important to the customer's first purchase, it usually has a somewhat smaller impact on satisfaction for repeat purchases.

Customer expectation is the third determinant of overall satisfaction, which measures the customer's anticipation of the quality of a company's products or services. Expectations represent both prior consumption experience, which includes some no experiential information like advertising and word-of-mouth, and a forecast of the company's ability to deliver quality in the future.

3.3 ACSI Consequences

Customer complaints are measured as a percentage of respondents who indicate they have complained to a company directly about a product or service within a specified time frame. Hirschman in his exit-voice theory argues that the immediate consequences of increased customer satisfaction are decreased customer complaints and increased customer loyalty (Hirschman, 1970).

If customers are dissatisfied, then they may have the option of exiting (e.g., going to a competitor) or voicing their complaints in an attempt to receive retribution. On the other hand an increase in overall customer satisfaction should decrease the incidence of complaints. Increased overall customer satisfaction should also increase customer loyalty (Reichheld& Sasser, 1990). Thus, satisfaction has a negative relationship with customer complaints, as the more satisfied the customers, the less likely they are to complain.

Customer loyalty- is a combination of the customer's professed likelihood to repurchase from the same supplier in the future, and the likelihood to purchase a company's products or services at various price points (price tolerance). Customer loyalty is the critical component of the model as it stands as a proxy for profitability.

ACSI represents a new means of evaluating and enhancing performance for organizations and companies and economies. Thus, ACSI helps firms, industries, and nations seeking to maintain and strengthen their positions in the increasingly competitive economic environment of the twenty-first century.

4. Service

Service industries are playing an increasingly important role in the overall economies of the countries of developed and developing countries. The 21st century is considered to be as the service industry. Researchers have tried to define service and to explain what service constitutes. There are many definitions regarding the concepts of service. Services are deeds, processes, and performances (Parasuraman et al. 1985). Gronroos (1983) defined service as: *"An activity or series of activities of more or less intangibles nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and / or systems of service provider, which are provided as solutions to customer problems"*. Sasser et. al.,(1978) defined another meaning for service: *"A service is a package of explicit and implicit benefits performed with a supporting facility and using facilitating goods"*. Service is: *"Any primary or complementary activity that does not directly. Produce a physical product - that is, the non-goods part of the transaction between customer and provider"* (Payne, 1993). Whereas Kotler et. al.(1999) defined service as *any activity or benefit that one party offers to another which is essentially intangible and does not result in the ownership of anything, and it may or may not be tied to a physical product.*

Services include all economic activities which are intangible, not physically apparent like products, which provide value to the customer. Service has become very crucial in all business industries due to globalization and the IT developments. Services are now seen almost to every part of our life, starting from the most essential demands, like eating to other entertainment activities, such as: sport, travelling, etc. Service is not bound to only service based businesses, like: banks, telecommunications, hotels, restaurants, and beauty salons, but it is found on all companies strategic tools for gaining a competitive advantage. Nowadays products heavily rely on its services to acquire competitive advantage, and to satisfy customers' needs.

4.2 Service Quality

Service quality has become a major area of attention during the past few decades for managers, researchers, practitioners because of its huge impact on business performance of firms. According to Brown and Swartz (1989) think that customers prefer and value companies that provide high service quality. Thus, the attainment of quality in products and services has become a drive concern of the 1980s. Customers judge service quality relative to what they want by comparing their perceptions of service experiences with their expectations of what the service performance should be. Marketers described and measured only quality with tangible goods, where as quality in services was largely undefined and un-researched (Parasuraman, et.al. 1985).

Quality in a service business has become a measure of the extent to which the service provided meets the customer's expectations. Companies have found that in order to increase profits and market share, they should pay much attention to service quality. Service quality has become a key strategic factor for companies to differentiate their products and services from other competitors by using service quality as a process that customers evaluate. Many researchers suggest that customers assess service quality by comparing what they feel a seller should offer and compare it against the seller's actual service performance (Gronroos, 1982). The importance of quality to firms and customers is unequivocal because of its benefits contributing to market share and return on investment (Parasuraman, et al. 1985).

The search for service quality is with no doubt the most important consumer trend of the new era, as consumers now are demanding higher quality in products and services than ever before. The fierce and intensifying competition and rapid deregulation have made many businesses in the service sector to seek profitable ways and becoming competitive. Delivering high service quality is a good strategy for businesses to succeed in their businesses.

Quality has been recognized as a strategic tool for attaining efficiency and business performance. With service assurance companies not even retain their existing customers but increase chances of getting and attracting new customers. Quality has been defined differently by authors, Crosby defined it as 'conformance to requirements (Crosby, 1984), Eaglier and Langeard (1987) defined it as 'one that satisfies the customer'. Parasuraman et al. (1994) tried to define service quality as a "global judgment, or attitude, relating to the superiority of the service. Service quality presents 'the consumer's overall impression of the relative inferiority / superiority of the organization and its services". Therefore, service quality is a key of survival to all servicing companies.

Service quality is viewed as a form of attitude representing a long-run overall evaluation. Maintaining service quality at certain level and improving service quality must be life-time efforts to those companies who desire life-time prosperity in customers' heart (Cronin & Taylor, 1992).

Gronroos (1992) in this line of propositions defined service quality as a difference between customer expectations of 'what they want' and their perceptions of 'what they get'.

Several authors have argued about the importance of quality to service firms, and have demonstrated its relationship with profits, increased markets share, return on investment, customer satisfaction, and future purchasing intention. Thus, service quality has become a significant differentiator and the most powerful competitive weapon that organizations want to possess (Berry et al. 1988). Therefore, companies try to get another advantage by assuring quality in their services in order to be more competitive in the marketplace.

Measuring goods quality is easier because it can be measured objectively with indicators like durability and number of defects, but service quality is an abstract item. According to Parasuraman et al.,(1988) service quality has three features which are unique to services: intangibility, heterogeneity, and inseparability of production and consumption. Therefore, they suggest that in the absence of objective measures, an appropriate assessment of the service quality of a firm is to measure consumers' perceptions of quality.

Production and consumption of many services are inseparable; as a consequence quality is not designed at manufacturing plants. Quality of services occurs during service delivery, during an interaction between a client and the service firm.

From literature review three underlying themes can be suggested:

- Service quality is more difficult for the consumer to evaluate than goods quality;
- Service quality perceptions result from a comparison of consumer expectations with actual service performance;
- Quality evaluations are not made solely on the outcome of a service; they also involve evaluations of the process of service delivery (Parasuraman et, al. 1985).

It is easy for consumers to evaluate purchasing goods because of many tangible cues that help them judge the quality, for example: style, package, color, fit, label, feel, etc., whereas with services fewer cues exist which make difficult for consumers to judge, and in many cases the provider's physical facilities, equipment, and personnel are like tangible evidence.

According to Gronroos (1994) there are three dimensions of service quality, the technical quality, the function quality and the corporate image:

1. *The technical quality*, which involves what the customer, is receiving from the service delivery. This can be measured by the consumer in a rather objective manner.
2. *Functional quality*, which involves the manner in which the service is delivered. This concerns the psychological interaction between the buyer and the seller and is perceived in a very subjective way, and would include elements such as:
 - Attitudes and behavior of employees;
 - Approachability of service personnel;
 - Accessibility of service;
 - Appearance and personality of personnel;
 - Relationship between employees, and;
 - Interrelationships between employees and customers.
3. *Corporate image* dimension of quality is the result how consumers perceive the firm, and it is expected to be built up mainly by the technical and functional quality of its services, and will eventually affect service perceptions.

Companies need to develop a customer oriented strategy concerning customer satisfaction, if they want to ensure a long term presence in the marketplace. Thus, a service quality measurement is very crucial for organization in order to track customer expectations with company performance. Service quality is a measure of how well the service level delivered matches customer expectations (Lewis & Booms, 1983). Delivering quality service means conforming to customer expectations on a consistent basis.

4. Methodology Used in this Study

In order to answer the core of the research problem, *Customer Satisfaction with Service Quality of Mobile Telecommunication*, the information from the customer perspectives play

an important role. Quantitative data collection methods were used to collect all the necessary data needed for answering the core research questions and problems of the research. Therefore, a structured questionnaire was conducted with the close-ended questions to customers of the three mobile operators in Macedonia, T-Mobile as a market leader, One as a market follower, and VIP as a market challenger.

All the empirical findings were collected from the Primary data and Secondary data. Primary data is the data collected from the use of questionnaires. The Secondary data was collected from the directories of the companies that were used from this study, online articles and journals. Many scholars stress the importance of using survey strategies, as the main instruments structured and unstructured interviews and questionnaires or a combination of both. In this study structured questions were used to collect data from respondents. The survey questions should find respondents' feelings about overall customer satisfaction, satisfaction for dimensions service quality, and the importance of service quality dimensions.

In order to measure the overall satisfaction of customers with products and services of the three mobile communication companies, the ACSI questionnaire was used with products and services of the three mobile communication companies. The ACSI score was derived from the following questions, each rated on a different 1-5 scale:

- 1. *What is your overall satisfaction with your mobile service delivery?***
- 2. *To what extent has the service met your expectations?***
- 3. *How well the service provided compare with ideal one?***

6. Measuring Customer Satisfaction with Service Quality Using ACSI

6.1 Frequency Statistics

The following tables show details of frequencies of the three core questions from the American Customer Satisfaction Index that was used to measure:

1. The overall customer satisfaction with the mobile service delivery (*table 1*);
2. The extent to which the service has met customers' expectations (*table 2*);
3. The extent to which the service provided is compared to the ideal one (*table 3*).

Table 1, shows the frequency distribution and the percentage of the answers to the questionnaire based on overall customer satisfaction, using the 5-point Likert scale (starting with 1- strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree)

Table: 1 Overall Customer Satisfaction

		Frequency	Percent	Valid Percent
Valid	Very dissatisfied	69	6.6	6.6
	Dissatisfied	325	31.0	31.0
	Neutral	426	40.6	40.6
	Satisfied	205	19.6	19.6
	Very satisfied	23	2.2	2.2
	Total	1048	100.0	100.0

Table 2, shows the frequency distribution and the percentage of the answers to the questionnaire based on Expectation Disconfirmation, using the 5-point Likert scale (starting with 1- strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree).

Table: 2 Expectation Disconfirmation

		Frequency	Percent	Valid Percent
Valid	Much worse	81	7.7	7.7
	Worse than expectation	402	38.4	38.4
	Neutral	323	30.8	30.8
	Equal to expectation	218	20.8	20.8
	Better than expectation	24	2.3	2.3
	Total	1048	100.0	100.0

Table 3, shows the frequency distribution and the percentage of the answers to the questionnaire based on the Desire Disconfirmation, using the 5-point Likert scale (starting with 1- strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree)

Table: 3 Desire Disconfirmation

		Frequency	Percent	Valid Percent
Valid	Very far from ideal	25	2.4	2.4
	Far from ideal	310	29.5	29.5
	Neutral	400	38.2	38.2
	Close to ideal	215	20.5	20.5
	Very close to ideal	98	9.4	9.4
	Total	1048	100.0	100.0

6.2 Cronbach’s Alpha

The **Cronbach's Alpha** for comparing the internal reliability of items both in expectation and perception of service quality was used. A reliability coefficient of .70 or higher is considered acceptable in most social science research. Table 4, shows the Cronbach's Alpha based on standardized items.

Table: 4 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.858	.858	3

According to table 4, Cronbach's Alpha results of .858 for the three items are above the suggested threshold of .70. The results show internal consistency between variables. **Table 5**, shows Item-Total Statistics, which provides five pieces of information for each item in the scale. Two of them are found to be most useful, **Corrected Item-Total Correlation**, and **Cronbach's Alpha if Item Deleted**. The former is the correlation of each specific items with the total other item in the scale. If this correlation is moderately high or high say .40 or above, the item is probably at least moderately correlated with most of the other items and will make a good component of this summated rating scale. The later shows if each item is deleted from the dimensions and to see the reliability scale for each dimension calculated when each item is deleted from the dimension in order to see if the deleted item is genuine or not. In case of Cronbach's Alpha for a dimension increases when an item is deleted it shows that item is not genuine in that dimension.

Table: 5 Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Overall Satisfaction	7.71	3.456	.738	.550	.796
Expectation Disconfirmation	7.81	3.338	.751	.566	.784
Desire Disconfirmation	7.86	3.374	.709	.503	.824

Table 5 above shows the reliability scale for all five dimensions of Item-Total Statistics. The obtained results show that there is internal consistency between the items. From the table above it can be also seen that almost all the items showed a lower value of reliability when deleted.

Table 6 shows ANOVA used for comparing means of populations in order to find out about significant differences between groups.

Table: 6 ANOVA

		Sum of Squares	Df	Mean Square	F	Sig
Between People		2485.277	1047	2.374		
Within People	Between Items	12.391	2	6.196	18.404	.000
	Residual	704.942	2094	.337		
	Total	717.333	2096	.342		
Total		3202.611	3143	1.019		

Table 6 indicates One-Way ANOVA used to test equality of the group’s means. It tests the group’s variances. From the results obtained the p-value .000 is less than the significant level .05. Thus, the *lower* the p-value, the *less* likely the result is if the null hypothesis is true, and consequently the *more* "significant" the result is, in the sense of statistical significance. Thus, the alternative hypothesis is accepted (i.e. rejects a null hypothesis) if the p-value is less than 0.05 or 0.01, corresponding respectively to a 5% or 1% chance of rejecting the null hypothesis when it is true.

6.3 The three ACSI Questions related with Customer Satisfaction

The three core questions of American Customer Satisfaction Index were used to measure Overall Customer Satisfaction (OCS), Expectation Disconfirmations (ED), and Desire Disconfirmation (DD). A five-point Licker scale and five different scores were used to represent the five-point scale.

Table: 7 The Core ACSI Questions

	Variable	1	5
1	Overall satisfaction	Very dissatisfied	Very satisfied
2	Expectancy disconfirmation	Falls short of expectations	Exceeds expectations
3	Performance vs. the Ideal	Not very close to the ideal	Very close to the ideal

According to table 7, respondents had to answer the three questions that deal with Overall Customer Satisfaction (OCS), Expectation Disconfirmations (ED), and Desire Disconfirmation (DD) with a Lickert scale ranging from 1 to 5.

- Concerning **Overall Customer Satisfaction (OCS)** respondents had to answer the research question: ***What is your overall satisfaction with your mobile service delivery***, with the following:
 - 5 = Very satisfied
 - 4= Satisfied
 - 3= Neutral
 - 2= Dissatisfied
 - 1= Very dissatisfied

Customers must have been satisfied or unsatisfied with their perception of services. Thus, the hypothesized test value in our study is 4 and it can split customers into satisfied and unsatisfied. In this way the null and the alternative hypothesis could be specified as follow:

Null hypothesis **Ho: $\mu \geq 4$** "Customers are satisfied with service quality".
 Alternative hypothesis **Ha: $\mu < 4$** "Customers are not satisfied with service quality".

One Sample T Test was used to analyze customer expectation. The one-sample t test shows whether a mean of a single variable differs from a specified constant.

Table: 8 One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Overall Satisfaction	1048	3.92	.980	.030

The one-sample statistics table shows the mean of Overall Satisfaction, the standard deviation, and the number of participants in each condition, which is 1048.

Table: 9 One-Sample Test

	Test Value = 4					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Overall Satisfaction	-2.742	1047	.006	-.083	-.14	-.02

As shown in Table 9, service scores had negative value, which means that service quality was not close to the service quality that satisfies customers. Therefore, the null hypothesis was rejected, that means that customers were not satisfied with service quality. Table 9 also indicates that the p-value .006 is lower than the significant level .05, denoting that there is a significance difference between customer satisfaction with service quality, and service quality delivered. **Therefore, we can conclude that customers were not satisfied with service delivery.**

2. Concerning **Expectation Disconfirmations (ED)** respondents had to answer the research question: **To what extent has the service met your expectations?**, with the following:
 - 5 = Better than expected
 - 4= Equal to expected
 - 3= Neutral
 - 2= Worse than expected
 - 1= Much worse than expected

Satisfied customers must have perceived perception worse, equal to or better than expected. Thus, the hypothesized test value in our study is 4 and it can split customers into satisfied and unsatisfied. In this way the null and the alternative hypothesis could be specified as follow:

Null hypothesis **Ho: $\mu \geq 4$** “Service quality has met customers’ expectation”.
 Alternative hypothesis **Ha: $\mu < 4$** “Service quality has not met customers’ expectation”.

One sample T Test was used to analyze customer expectation. The one-sample t test shows whether a mean of a single variable differs from a specified constant.

Table: 10 One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Expectation Disconfirmation	1048	3.88	1.009	.031

The one-sample statistics table shows the mean of Expectation Disconfirmation, the standard deviation, and the number of participants in each condition, which is 1048.

Table: 11 One-Sample Test

	Test Value = 4					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Expectation Disconfirmation	-3.951	1047	.000	-.123	-.18	-.06

As shown in Table 11, service scores had negative value, which means that service quality was worse than expected. Therefore, the null hypothesis was rejected. The null hypothesis here is that the means are equal, and the alternative hypothesis is that they are not. A big t, with a small p-value, means that the null hypothesis is rejected, and we would assert that the means are significantly different (while a small t, with a big p-value indicates that they are not significantly different). **Thus, service delivery was lower than customers’ expectations.**

- Concerning **Desire Disconfirmation (DD)** respondents had to answer the research question: **How well the service provided compare with ideal one?** with the following:
 - 5 = Very close to ideal
 - 4 = Close to ideal
 - 3 = Neutral
 - 2 = Far from ideal
 - 1 = Very far from ideal

Satisfied customers must have perceived perception far from, close to or very close to ideal. Thus, the hypothesized test value in our study is 4 and it can split customers into satisfied and unsatisfied. In this way the author could specify the null and the alternative hypothesis as follow:

Null hypothesis **Ho: $\mu \geq 4$** "Service quality is close to or very close to ideal"
 Alternative hypothesis **Ha: $\mu < 4$** "Service quality is not close to or very close to ideal"

One Sample T Test was used to analyze customer expectation. The one-sample t test shows whether a mean of a single variable differs from a specified constant.

Table: 12 One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Desire Disconfirmation	1048	3.83	1.031	.032

The one-sample statistics table shows the mean of Desire Disconfirmation, the standard deviation, and the number of participants in each condition, which is 1048.

Table: 13 One-Sample Test

	Test Value = 4					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Desire Disconfirmation	-5.274	1047	.000	-.168	-.23	-.11

As shown in Table 13, service scores had negative value, which means that service quality was not close to the Desire Disconfirmation. Therefore, the null hypothesis was rejected. A big t, with a small p-value, means that the null hypothesis is rejected. **Thus, service delivery was lower than customers' expectations comparing it with the ideal service.**

7. Findings and Research Questions

The purpose of this study was to measure customer satisfaction with service quality delivered by the three mobile operators in Macedonia. As was previously mentioned, the three ACSI core questions were used to find out about Overall Customer Satisfaction (OCS), Expectation Disconfirmation (ED), and Desire Disconfirmation (DD). The study was carried out using a quantitative method of collecting primary data, out of 1150 questionnaires, 1048 were analyzed using Excel and SPSS 17 to administer this study.

The empirical findings from customers' opinions, mobile users of the three mobile operators in Macedonia were not satisfied with service quality offered by the mobile operators. Findings also showed that customers' expectations were higher than customer perception. Significance tests for measuring the mean rating for satisfaction provided strong evidence for rejecting the null hypothesis, so the tests proved with 95 % confidence that customers were not satisfied with service quality.

In conclusion, companies can benefit from the fact of knowing how customers perceive the service quality and knowing the way of how to measure service quality. Therefore, the management can use the specific data obtained from the measurement of service quality in their strategies and plans. This will help companies to better understand various service quality dimensions that affect overall service customer satisfaction. In this way, companies can better allocate resources to provide better service to their customers. Thus, understanding customer satisfaction with service quality is very important and challenging.

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