

Customer Satisfaction Analysis and Improvement Strategy of Telecommunications Industry

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Abstract

With the advancement of "Internet Plus" plan, customer satisfaction becomes one of the important factors affecting the development of the telecommunications industry, but because the telecommunications industry products and services lack of visibility, often before buying a product or service to its customers expectation is not obvious, so how to improve customer satisfaction become an urgent problem in the telecommunications industry. Based on the research results of domestic and foreign scholars and the empirical questionnaire survey, this paper discusses the influencing factors of customer satisfaction in the telecom industry from the qualitative and quantitative analysis. Use social network analysis to build customer satisfaction factors and establish indicators. The questionnaire was designed according to the indicators to verify the influencing factors of customer satisfaction in the telecom industry and put forward corresponding Suggestions and strategies for improvement, so as to provide references for the domestic telecom industry to improve customer satisfaction.

Keywords

The telecom industry, Customer satisfaction, Influencing factors, Improvement strategy.

1. Introduction

At present, China telecom industry is dominated by China telecom, China mobile and China Unicom. With the rapid development of the telecommunications industry, with the continuous development of market economy and the increasingly fierce market competition, in order to occupy a higher market share and obtain higher profit and consolidate the competitive advantages, more and more enterprises have realized the importance of customer satisfaction, began to in the process of enterprise management to improve customer satisfaction. To meet the needs of customers, improve customer satisfaction, improve the quality of customer service, maintain good customer relations, enhance customer loyalty, is an important condition for the sustainable development of enterprises, only "to meet the needs of customers" is possible to obtain more profits. Customer is the premise and foundation of enterprise survival, how to retain customers is the enterprise is very concerned about, and customer satisfaction is the key to retain customers. Therefore, the three major operators have been constantly trying to reform the action, business structure accelerated adjustment. The current three carriers in order to attract new customers, retain old customers big price war, for consumers in a short period of time to improve the customer satisfaction, but for the enterprise long-term development and ascension is not too much significance of customer satisfaction, based on this, for China's telecom industry customer satisfaction research and practice there is a pressing need and value.

2. Theoretical Basis

With the development of politics, economy, science and technology as well as society, the opportunities and challenges for the operation and development of the telecom industry are quite different, and the factors affecting customer satisfaction are changing constantly.

The study on customer satisfaction of telecommunication industry in foreign academic circles began in 1980s. At first, the researchers tried to build the evaluation and measurement model of satisfaction by combining the characteristics of network information technology and the overall operation

condition of the telecommunication industry. Based on data statistical analysis techniques, most studies simply weighted the average of various indicators of factors affecting customer satisfaction to obtain the satisfaction index. In the 1990s, the construction and improvement of customer management theory under the guidance of service concept made the customer satisfaction in the telecom industry achieve rapid development in both practice and theory. Foreign empirical studies on customer satisfaction in telecom industry can be divided into the following three categories. First, research based on different operators: Gerputt (2001) took mobile customers as the research object and conducted empirical analysis by collecting sample data. The research results show that customer satisfaction does not play a direct role in customer turnover rate, but the higher customer loyalty is, the easier it is for enterprises to retain customers, thus reducing customer turnover rate^[1]. Kim (2004) found that customer retention and customer loyalty were strongly correlated with telecom customer satisfaction^[2]. Ahmad (2012) to mobile business hall counter broadband customer service quality felt by regulating variable, research of the relationship between broadband service quality and customer satisfaction, the results show that the mobile counter service quality impact on customer satisfaction path does not exist in the regulation, but when the customer perceived quality of the mobile broadband is higher, the satisfaction will be high^[3]. Second, the research is based on different cultural backgrounds. Lerzan(2012) explored whether the differences in cultural backgrounds will bring different degrees of influence on the satisfaction and loyalty of users in different regions. The research found that users with a strong sense of self-worth have higher satisfaction and higher loyalty^[4]. Zhaohua Deng et al. (2012) believe that with the rapid development of mobile communication and the popularity of mobile phones, operators can make efficient use of instant messaging (MIM) service technology to greatly improve user satisfaction. The empirical analysis found that strong factors affecting customer loyalty include customer trust, conversion cost and customer satisfaction, etc. In addition, it was found that customer age, gender and mobile phone use time play a certain moderating role in each influencing path^[5]. Three is based on the research of different brand mobile phone product features: Haverila (2011) through the study of mobile phone function mobile customer preference influence on the degree of satisfaction and repurchase intention, it was found that the business function, support function and appearance of the mobile phone design directly affect customer satisfaction, and found that the duration is the most value function of respondents^[6].

The research on customer satisfaction of domestic telecom industry is carried out with the continuous development of 2G, 3G and 4G era. The factors influencing customer satisfaction vary greatly in different stages, which has relatively strict requirements for the research on customer satisfaction of the high-speed development industry of telecom.

In the 3G era, mengqinghong et al. (2011) pointed out that, compared with the 2G era, the error rate of salesclerks in the 3G era was increasing, resulting in higher and higher customer complaint rate, especially in the data growth business, which was the highest among all the businesses^[7]. Zhengyun (2012) analyzed the competition situation in the 3G communication market and found that only by constantly improving customer satisfaction and user inventory can the three major domestic operators change their competitive position in the market. The study also found that the key factors affecting the satisfaction of 3G mobile phone users include service quality and product quality, among which tariff price and network security have the most significant influence on customer satisfaction^[8]. Niu Hua (2013) tried to explore whether customer satisfaction can actively promote the development of China mobile in the 3G market and whether it can enhance the competitive advantage of China mobile in the market. In the empirical analysis, the structural equation statistical analysis tool is used to verify the relationship between corporate image, perceived value and perceived quality and user satisfaction and loyalty^[9]. Sunyan (2012), based on the perspective of project management, took the establishment of a perfect 3G customer satisfaction measurement system as his main research purpose, deeply investigated the satisfaction status of 3G mobile phone holders of China Unicom, and analyzed the factors affecting such customer satisfaction^[10]. Nowadays, tanhui et al. (2016) believe that telecom operators tend to treat the symptoms rather than the root causes by endlessly visiting

customers or comforting customers with various benefits and preferential policies to improve customer satisfaction^[11]. Wuwenlong (2016) pointed out in his research that China's communication operators should resolutely abandon the traditional management mode and effectively use the new management mode of project management to improve customer service satisfaction. Firstly, a scientific management mode should be established; secondly, each management module should be refined; finally, the promotion of the management mode within the enterprise should be emphasized to further improve customer satisfaction^[12].

On the whole, the exploration and research on customer satisfaction in the communication industry at home and abroad have reached a certain depth, from the initial simple exploration of factors affecting customers to the establishment of a series of mature measurement indicators and systems, but lack of analysis of factors affecting customer satisfaction in the industry. Based on this, this paper combines qualitative and quantitative methods to analyze the factors affecting customer satisfaction and put forward relevant Suggestions.

3. Construction of influencing factors based on social network analysis

The papers retrieved in this paper are mainly from CNKI.net and WANFANG DATA, with satisfaction as the theme and the telecom industry as the title or keywords, and the relevant papers from 2008 to 2019 are selected. After study and screening, 42 papers with high correlation were finally obtained as verified data sources, among which the main ones were journal papers and a few were degree papers, which had high reliability for reliability verification. The following research trend chart can be obtained from the 42 literatures on customer satisfaction in the telecom industry:

As can be seen from the above broken line graph, 2008 was the peak year of customer satisfaction research in the telecom industry, and the research heat did not decrease in the following years.

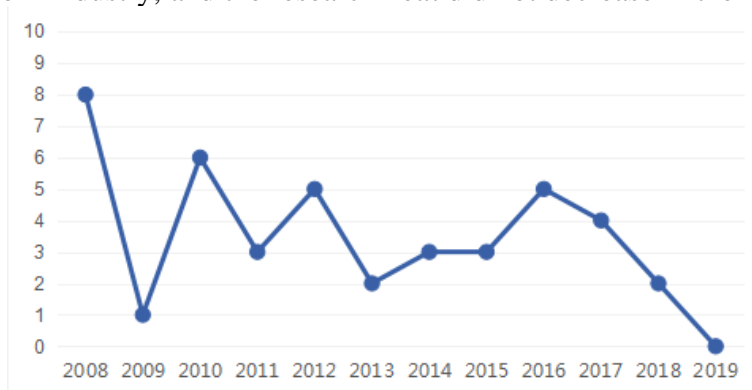


Figure 1 Statistical chart of research trends from 2008 to 2019

In 2016, the research on customer satisfaction in the telecom industry gradually became mature. With the gradual commercialization of 5G technology, the research on customer satisfaction in the telecom industry will welcome the New Year again in the next few years.

After careful study of the 42 sample papers, literature extraction and data preprocessing, the obtained data can be further processed by BibExcel tool. First before use Excel format of custom cell will obtain data normalization processing, custom cell format for: DE - "@" || behind (note - there is a space), in which DE representative keywords tag, convenient and subsequent use BibExcel processing data, BibExcel process of processing data no longer show here, the following is 31 key words and word frequency statistics, shown in the table below:

Table 1 statistical table of word frequency

Keywords	word frequency	Keywords	word frequency
Fee payment	26	Business administration	6
Perceived quality	26	Value-added service	5
Corporate brand image	19	Tiered service	5

Customer service	18	Preferential promotion	4
Communication network quality	14	Convenience	4
Complaint handling	13	Employee satisfaction	3
Business handling	12	Fault handling	3
Customer loyalty	12	Push notifications	3
Business hall management	12	Standardize the market	2
Customer expectations	11	Tangibles	2
Business innovation	11	Empathy	2
Reliability	9	External factors	1
Customer care	9	Enterprise credit	1
Customer complaints	8	Customer value	1
Perception of fairness	6	Competitive advantage	1
Responsiveness	6		

The corresponding co-occurrence matrix can be obtained by continuing data processing. At this time, the co-occurrence matrix cannot be directly used for visual analysis, which requires further processing of the co-occurrence matrix.

Open the co-occurrence matrix before the import of ucinet and convert it into the format that can be processed by the software. Then, the co-occurrence matrix can be processed by transpose and dualistic dispose before continuing the visualization processing and centrality analysis. After the visualization operation of ucinet, the following results are obtained.

Table 2 center degree analysis

	Keywords	Degree	NrmDegree	Share
4	Perceived quality	28.000	96.552	0.053
18	Complaint handling	26.000	89.655	0.049
30	Fee payment	26.000	89.655	0.049
11	Customer service	25.000	86.207	0.047
17	Communication network quality	24.000	82.759	0.045
22	Business innovation	24.000	82.759	0.045
16	Corporate brand image	24.000	82.759	0.045
21	Business handling	23.000	79.310	0.043
9	reliability	23.000	79.310	0.043
25	Business hall management	23.000	79.310	0.043
12	Customer care	20.000	68.966	0.038
15	Business administration	20.000	68.966	0.038
5	Fault handling	19.000	65.517	0.036
29	Value-added service	19.000	65.517	0.036
23	Push Notifications	19.000	65.517	0.036
6	Customer expectations	19.000	65.517	0.036
20	Responsiveness	18.000	62.069	0.034
10	Customer complaints	16.000	55.172	0.030
3	Perception of fairness	15.000	51.724	0.028
28	Employee satisfaction	14.000	48.276	0.026
1	Convenience	14.000	48.276	0.026
26	Preferential promotion	13.000	44.828	0.024
14	Customer loyalty	13.000	44.828	0.024
2	Tiered service	12.000	41.379	0.023

24	Empathy	12.000	41.379	0.023
27	Tangibles	12.000	41.379	0.023
7	Standardize the market	11.000	37.931	0.021

According to the statistical results analyzed by the center Degree of the above Degree, the larger the Degree of the center Degree is, the higher the weight of the point in the network. In this paper, it can represent the Degree of influence on customer satisfaction in the telecommunications industry, and the larger the value is, the greater the influence on customer satisfaction will be.

Based on previous research results on customer satisfaction of relevant industries, characteristics of telecom industry and user concerns, the following satisfaction index system table is established.

Table 3 telecom industry satisfaction index system table

Level 1 index	二级 Level 2 index	Level 3 index
Customer satisfaction	Corporate brand image	Industry leading
		The innovation ability
		Industry reputation
	Customer expectations	Products \ business
		Quality
		Price
	Perceived quality	The quality of connection
		The quality of network
		The quality of service
		Business handling
		Information inquiry
	Value perception	Charges
	Customer satisfaction	
Customer complaints		

The establishment of this index model is obtained through sorting and screening of the selected 42 papers, and verified by social network analysis method that it has a strong correlation and credibility. The questionnaire design of subsequent empirical studies will be based on this index system.

4. Customer satisfaction analysis based on questionnaire survey

The subjects of this study were randomly surveyed in Chongqing and collected through online questionnaires on social platforms such as WeChat and QQ, so as to ensure the comprehensiveness of the samples. To effectively fill in the questionnaire after two days of data collection, 153, and a user account for about 43.8% of men, women account for 56.2%, a relatively balanced sample objects in terms of gender, age from 15 to 24 accounted for 67.3%, 25 to 34 accounted for 19.6%, over the age of 35 to 44 5.2% than 44 7.9%, most of them are young students and social workers, the whole sample selection is more representative, because for the telecoms industry's ethos of consumers in general in this range, in addition to this, The consumer group aged between 18 and 35 has the ability to think rationally about the questions, which provides a full guarantee for the authenticity and validity of the questionnaire.

In order to study the main factors affecting customer satisfaction in telecom industry, this paper measures customer perception from four dimensions of brand image, customer expectation, perceived quality and perceived value by relying on the indicator system obtained through social network analysis in the previous part.

Survey, the biggest advantage of Chongqing telecom is cheaper and the speed is fast, the customer in Chongqing telecom business experience gained by the perceived quality and perceived value is higher,

for Chongqing telecom related business, more than 44.44% of consumers are satisfied, and 37.91% of consumers think generally, overall Chongqing telecom customer experience is better.

Table 4 proportion chart of influencing factors of customer satisfaction

Perceived quality			Value perception		Corporate brand image	Customer expectations
High-speed internet connection	To deal with fast	Good service	Novel service	Low cost	Excellent brand	Advertising
52.94%	28.76%	32.68%	13.07%	45.1%	37.91%	32.03%
47.17%			23.99%		15.63%	13.21%

Note: the above results are more than 1 because the questionnaire questions are set as multiple choices. By total customer satisfaction factors over the figure 3.2.4.2 as you can see, for the telecom industry, the influence degree of the perceptual quality for customer satisfaction is the largest, accounting for nearly half of the proportion, secondly the influence degree of the perceived value accounted for almost a quarter, for the telecom industry proportion is also a lot of the influence of customer satisfaction, relatively speaking, corporate brand image and the influence of customer expectations is smaller, but also don't allow to ignore.

5. Telecom companies improve customer satisfaction strategies

To improve customer satisfaction, further detailed analysis should be carried out based on customer perception and experience, and the reasons for customer dissatisfaction should be found and found from individual cases of customers, and the root causes should be promoted from personality problems to general problems, so as to truly locate the root causes. The cause could be a business rule problem, a service process problem, or a system-side problem. The process of satisfaction improvement is a systematic process, which cannot be achieved overnight. It is a process that needs to be improved continuously by using the complaint handling mechanism. This paper will elaborate the strategies and Suggestions to improve the customer satisfaction of telecom companies from four aspects.

5.1 Perceived quality

From the results of questionnaire analysis, the factors of perceived quality have a great impact on customer satisfaction in the telecom industry. Therefore, telecom enterprises first need to strictly check the quality requirements of telecom equipment and choose telecom infrastructure equipment providers with guaranteed brands. Arrange professional maintenance personnel to check the equipment regularly to ensure the normal work of the equipment and the timely handling of abnormal equipment. Meanwhile, it is necessary to increase efforts in the research and development of new technology to improve its own technological innovation ability. Secondly, service quality is the focus of customers' attention. Telecom companies need to strengthen staff training to improve customer service quality and actively adopt customer Suggestions. Finally, business handling and information inquiry are crucial to user experience. Telecom enterprises need to constantly strengthen the speed of business handling and relax the threshold of business handling to improve user experience and meet user needs.

5.2 Value perception

The fundamental reason why customers recognize the value of the products and services provided by telecom companies depends on whether the products and services can meet their own needs. When customers buy goods, they will choose goods or services according to the principle of "profit maximization". Therefore, the most effective way to retain customers is to maximize customer transfer value. Enterprises launch similar products or services at different prices. The price is determined by the value of the products or services, but the functional attributes will always focus on

meeting the needs of different customers and maximize the value of customers to improve customer satisfaction. Pay attention to meet customer personalized requirements, although the enterprise will not market segmentation to the individual, but need to segment consumer groups as far as possible, in order to meet the different needs of each segment market.

5.3 Corporate brand image

A good corporate brand image is the company's best publicity. Promotion enterprise's brand image and build is need time to accumulate, require companies to provide products and service quality assurance, and then continuously consolidate old customers, develop new customers, through the accumulation of hundreds of thousands of transactions, corporate brand image will be deeply rooted in the hearts of the people, the company's corporate brand image will be better and better. At the same time, improve corporate brand image to improve social responsibility, telecommunications companies can connect to the network for remote areas, to provide customized services for the elderly, and so on, constantly strengthen their public image, enhance the public influence of enterprises.

5.4 Customer expectations

As the least influential factor of customer satisfaction in the telecom industry, customer expectation is relatively ineffective in its promotion strategy, because when customers have high expectations on the company's products and services, the products and services provided by the company will be more difficult to satisfy customers, and the higher the expectation, the greater the disappointment. However, the expectation of customers cannot be eliminated, and customers need surprises to improve their satisfaction. Enterprises can combine them with publicity and propose corresponding rewards to enhance the interactive process of publicity activities, so as to improve user experience and meet the needs of customers. Customer expectations need to be combined with the other three aspects to improve customer satisfaction as much as possible.

6. Conclusion

First of all, this paper analyzes the current situation of the development of the domestic telecommunications industry, and expounds that the development of the telecommunications industry has a good potential, but there are also hidden problems to be solved under such circumstances. Based on the analysis summary about the telecom industry at home and abroad in recent years after the study of customer satisfaction to customer satisfaction as the starting point, through the social network analysis method to establish the corresponding index system, the empirical analysis lays the foundation for later, through the questionnaire survey analysis, finally from four aspects of the relevant suggestion and strategy of improving customer satisfaction.

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