

Research on the Customer Involvement in E-Commerce 2.0

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Abstract - *As the existing related researches show and the analyze of cases indicates, the customer involvement is the key point in the E-commerce 2.0. With the application of the exploratory factory analyze, we develop a scale of the customer involvement in the E-commerce. Based on the scale, we extend the customer involvement theory to seven dimensions in the E-commerce area. After quantitative analysis, we give a multi-dimension description of the current customer involvement in the E-commerce and some suggestions about the development of the E-commerce.*

Keywords: The E-commerce 2.0, The Customer Involvement Theory, The Scale

1 Introduction

With the development of the E-commerce and the revolution of the Internet, E-commerce 2.0 era is unveiled. The existing representative viewpoints about it are:

In 2005, Safa Rashtchy of Piper Jaffray Companies^[1] gave a prospect of the future development of the E-commerce 2.0, saying that the E-commerce 2.0 era is the time of the fusion of platform with advanced searching technology to make the buying easier.

In 2006, the CEO of idagou.com, Peng Zhiqiang pointed out the essence of the E-commerce 2.0 is "Customer Era". Customers control their buying decision and saying^[2].

In 2007, the consultant of eBay, Ralf VonSosen described a whole generation of E-commerce^[3]: (1) Sell Everywhere--Be Seen and Be Shopped (2) The Long Tail -- Target Niche Markets (3) Customers Rule--Build a Community of Raving Fans (4) Personalized Shopping --Make It Fun to Shop and Easy to Buy (5) Mash-ups --Integrate and Collaborate (6) Data is King--Collect a Wealth of Opportunities.

The E-commerce 2.0 is similar to the conception "customers oriented" of Web 2.0, which is featured both in the development of technology and the business operation. Almost all these great transforms in business can own to the changes of the customer involvement: (1) It's easier to exchange information which makes customers contribute more to the sellers. The Niche Markets and the Long Tail are obvious (2) Customers make consumption propaganda via

SNS, the Word-of-Mouth effect highlights (3) The personalized consumption concept increase. Customers want to take more involvement in custom production and reverse resource allocation highlights

All of these totally change the E-commerce. The customer involvement is the core of the business attributes of the E-commerce 2.0, which differs from the traditional business attributes. Therefore, the traditional customer involvement theory can't be totally applied. And most of the existing researches focus on the customer loyalty and satisfaction, the CRM theory but less focus on the customer involvement theory.

In conclusion, this research attempts to be an exploratory empirical research on the customer involvement in the E-commerce 2.0 and extend the customer involvement theory to more dimensions

2 Case Study

There are already some on-line shops using the multi-aspects of the customer involvement to make their products and brands much valued.

Reverse resource allocation—Qi Gege

Qi Gege is an on-line shop in Taobao selling original clothes which are all designed by a team with 15 young designers and 1 professional fashion coordinator. The team design the products samples off-line and let the customers vote on-line to decide the most popular design. And the team will revise the chosen design before it goes to produce.

Customers make the price—The UFO Shoes

UFO is a lady's shoes brand of Shanghai Mai Zhong Company. All the new shoes put online have a 30-days presale and the price will increase by time during these days. The final price is made by the presale numbers. It won't put into production until the presale is over.

Emotion Marketing via SNS—Lie Bo

Lie Bo is an on-line clothing shop in Taobao and do well in the niche market. With its bold outstanding designs, the combination of fashion and ethnic, it has a loyal customer base. Lie Bo uses some advertorial in every clothes' webpage to communicate with customers and convey their brand culture. At the end of 2009, Lie Bo developed its BBS to interact with customers.

Control the custom production—Shi Zhibao

Shi Zhibao is an on-line shop selling customized pillows in Taobao. It designed a system which can calculate the curve between the head and neck shoulders through your height, head circumference, neck arc and shoulder width. With these data, it can make the fittest pillow for the customers.

3 The Customer Involvement Theory

3.1 Literature Review of the Customer Involvement Theory

The Customer Involvement Theory originated in the late 1970's. Lovelock & Young^[4] researched the service production with the customers involved in, and found out that customers can make contribution to the production efficiency.

3.1.1 The Definition of the Customer Involvement

Silpakit&Fisk^[5] suggested that the customer involvement included the devotion in spirit, intelligence, actions and the emotion.

Cermak^[6] indicated that the customer involvement was the customer's specific action which related to the service production and transformation, and in the process the customer's effort and involvement degree.

Karthik&Namasivayam^[7] defined the customer involvement as the role of the customer played, for the service or the tangible production.

3.1.2 The Dimension of the Customer Involvement

Silpakit&Fisk^[8] suggested that the customer involvement included the devotion in the spirit, intelligence, actions and the emotion.

Kellogg^[9] used the "Key events analysis" and found there were 4 dimensions of the customer involvement: preparation, relationship building, information exchange behaviour, intervention behaviour.

Ennew&Binks^[10] alleged 3 dimensions: Information Sharing, Responsible behaviour, Personal Interaction.

Peng Shijin pointed out that in the light industrial products retailing, the customer involvement can expand to 4 aspects: the establishing the promise, the creation of the products, the production process, the pricing and the marketing process.^[11]

3.2 The Features of the Customer Involvement in the E-commerce 2.0

After case studies and literature review, we conclude the new features:

1. The dimensions of the customer involvement have been expanded widely. Customers can easily participate into almost every part of the commerce: appeal the demand, take part in the creation and production, communicate via SNS, feedback and keep constant attention.
2. Customer involvement are greatly increased in the spiritual and material ways. Customers begin to involve in the production, and the time and emotion which involved by customers have increased greatly compared with the traditional trade.

3. The roles of customers become diversified. In E-commerce 2.0 the roles include: the buyer, the disseminator, the follower, the advisor, and the co-developer.
4. The customer involvement behavior can build a circle. Begin with the creation, through design, production, pricing, purchasing, feedback, communication and constant attention, customer s involve in all and this involvement circle will continue. Customers involve in any of them can bring monetary value or the knowledge value to the sellers. The more integrate customers involve in the circulation, the higher of the customer loyalty and satisfaction. And repeating this involvement circle, the customer loyalty and satisfaction will show spiraling upward trend.

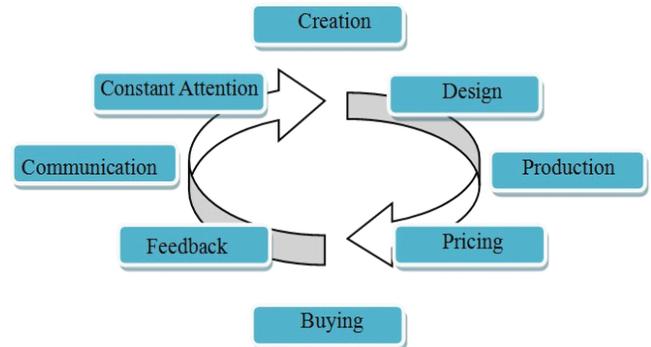


Fig. 1. The customer involvement circle

4 Construction And Inspection Of The Customer Involvement Scale Of E-Commerce 2.0

4.1 The define of the research

Because of the complexity of measuring the customer involvement, this research mainly focus on the customer involvement of clothes retailing in Taobao.

The reasons for choosing the E-commerce clothes retailing are:(1)The E-commerce clothes retailing is developing quickly(2)There appears a trend of the E-commerce 2.0 in clothes retailing. The reason of choosing Taobao is that it's the largest C2C platform in Asia.

4.2 Construction and inspection of the customer involvement scale

Cermak (1994) was the earliest one doing quantitative research on the customer involvement. They measured the customer involvement by asking "What's the actual pay of time and the devotion?" Claycomb (2001) used three dimensions to measure the customer involvement which are attendance, offering information and cooperation. Then he developed a scale including 3 dimensions and 9 items.

However, there isn't a mature and recognized scale of the customer involvement. This research will apply exploratory

research technology to develop a customer involvement scale based on the referencing predecessors' experience.

4.2.1 The Determination of Measuring Conception

This research defines the customer involvement as the pay in the spiritual and material ways before and after the commodity put on line. Refer to Kellogg" Key events analysis", we measure the customer involvement with constant attention, buying decisions, feedback & communication and co-development.

4.2.2 The Scale Formation

First, with the literature review and small-scale interview, we developed our initial scale with 45 items. Second, let 22 experienced on-line shopping customers do the initial scale. Then we discussed the items and the final scale came out with 32 items.

4.2.3 The Questionnaire and Data Collection

In December, 2010, we started to do questionnaires through on-line and off-line. We gave out 1000 to the people who have on-line shopping experience through sojump.com and the valid return is 334; and the off-line towards the colleges in Beijing for 800 and the valid return is 146. The final valid return is 480.

After the collection, we did some rejection by checking (1).Whether the questionnaire filled out by some rules (2).Whether complete the questionnaire

4.2.4 Specimen Descriptions

To ensure the reliability of the research, we did statistic analysis on gender, age, education and income/month and compared with CNNIC<2009's Chinese network research on on-line shopping>. Due to only gender with CNNIC has greater difference between the data, so with weighted adjustment on gender, the adjusted samples basically matched with CNNIC.

According to iReseach<2009-2010China's E-commerce industry development report>,we did classified statistic by 4 regions, which are Beijing and Southeast coastal area, central area, west area(Sinkiang, Tibet, Qinghai, Gansu, Ningxia) and overseas, and the results were 316,154,8,7. And the region of specimen matched the iResearch basically.

We didn't do random sampling but with weighted adjustment, the sample matched the entity in the crowd structure and regional structure.

4.2.5 Exploratory Factor Analysis and Results (using SPSS17.0)

TABLE I
KMO & Bartlett's TEST

	Sampling enough degrees	.888
	Kaiser-Meyer-Olkin	
The sphericity Bartlett testing	Approximate chi-square	5877.809
	Df	496
	Sig.	.000

KMO was 0.888, the sphericity Bartlett test's Sig=.000, proved that the data was suitable for factor analysis. According to Kaiser's rule, characteristic root should be greater than 1.

And applied the maximum variation method doing orthogonal rotating, kept the items with factor loading quantity absolute value over 0.45. According to the characteristic value and the variance explained contribution, the characteristic value of the first 7 factors are above 1,and he cumulated variance explained contribution is 57.970%. So we extracted the first 7 factors.

TABLE II

EXPLAIN THE TOTOAL VARIENCE

Component	Extraction squares loaded	Rotating squares loaded		
	Cumulative %	Total	Variance%	Cumulative %
1	24.637	4.587	14.333	14.333
2	36.048	2.776	8.676	23.010
3	42.578	2.500	7.812	30.822
4	47.087	2.423	7.573	38.395
5	51.151	2.382	7.444	45.839
6	54.724	2.289	7.153	52.992
7	57.970	1.593	4.978	57.970

Extraction method: the principal component analysis

4.2.6 The Scale Formation

According to the items after attribution, we named the factors as:

TABLE III.

FACTOR ANALYSIS RESULT

Factor	Scale items	Factor loading	Contribution rate
Co-develop ment	D4 I often participate in design activities hold by the stores	0.811	24.637 %
	D3 I often vote or price for the stores	0.803	
	D6 I'll active to offer the stores ideas about web design, activities and services	0.764	
	D2 I know there are shops online let customers participate in pricing	0.714	
	D5 I often go presale	0.694	
	D1 I know there are drawings on the Internet so that customers can vote	0.643	
	D7 I have emotional exchange experience with the shopkeepers via BBS or IM	0.593	
social interaction	A5 I know and pay attention to some on-line shops' BBS, twitter or other SNS	0.789	11.411 %
	A8 I often participate in some online activities held by stores	0.763	
	A6 I often participate in the stores' twitter or BBS	0.724	
	A7 I'll active to vote for the in year-end ranking shops.	0.714	
spread&feedback	C4 I'll warn others about the unhappy on-line shopping experience	0.611	6.530 %
	C3 I often active to others recommend online or commodities	0.602	
	C5 I'll share my buying experience on facebook, twitter, douban ect.	0.588	
	C6 After buying, I'll share the commodity to Tao Jianghu	0.574	
	C1 After buying, I always give	0.513	

	serious comments on commodity		
	C7 I'll sometime active to offer some suggestions on commodity.	0.474	
appeal	B9 I'll initiatively inform the shopkeepers about my needs	0.742	4.509 %
	B8 I'll ask for rights if I found false information	0.661	
	B7 I have active contact experience with other buyers to communicate about commodity	0.595	
	B2. I'll active to contact the shopkeeper for the commodity which is sold out.	0.475	
communication	B6 If I have questions about the commodity, I'll take the initiative to contact the shopkeeper consulting	0.742	4.063 %
	B5 I concern about other buyers comments when buying	0.722	
	B10 I pay attention to logistics information, and will remind delivery on time in stores	0.634	
	C1 After buying, I always give serious comments on commodity	0.503	
constant attention	A1 I have fixed on-line shops	0.738	3.573 %
	A2 I'll often check some on-line shops even if I don't have demands.	0.716	
	A4 I subscribe to some shops on the new notice	0.634	
	A3 I often spend a lot of time browsing some stores of commodities	0.568	
preparation	B1 Before buying, I'll have considerable price searching, and go try-on	0.718	3.246 %
	B3 Before buying, I'll view others' share or comments on BBS	0.668	

4.2.7 The Reliability and Validity of the Scale

Cronbach's α is mainly using for evaluating the consistency of the measure of all reaction degree. Nunnally (1978)、Nunnally & Berntein (1994) thought that, Cronbach's α should be higher than 0.7. The overall reliability of this research is 0.887 meaning that the measuring tools of internal consistency is high.

TABLE IV

RELIABILITY STATISTICS

Cronbach's Alpha	Based on the study Cronbachs gamerelease standardization	Terms
.887	.891	32

Validity can be showed by content and structural validity. All items of this scale are based on the related reference of scholars home and abroad, and the small-scale interview. With the pretest, we revised the scale and the final scale came out with high content validity. The structural validity can be showed by all variables on the common degrees factors to reflect the discretion. The principal component analysis operation results show all tests in the same factor of loads are larger than 0.45 value and the cross factor is small load. So it has excellent composite reliability, convergent validity, and discriminate validity.

4.3 The extending of the customer involvement theory

We got 7 dimensions after factor analysis, which also meant we extended the traditional customer involvement theory to 7 dimensions. The details are below:

Researcher	Kellogg	Ennew & Binks	Peng Yanjun	We
<i>Customer Involvement dimension (Arranged by factors importance)</i>	Preparation	Information Sharing	Preparation	Co-development
	Relationship building	Responsible behavior	Communication	Social interaction
	Information exchange behaviors	Personal Interaction	Cooperate	Spread&feedback
	Intervention behaviors		Interpersonal Interaction	Appeal
				Communication
				constant attention
				Preparation

- Customer participation dimension has been greatly expanded. The traditional business can't involve co-development, social interaction and constant attention.
- Factors explain rate shows, co-development is the most important factor and the importance of other factors decrease one by one, so is the value offered to the sellers.
- Because of the development of the Internet, preparation is not that important as before.
- With the development of the social media, the social interaction an communication & feedback become much more important.
- The customer involvement will effect more on the sellers' strategy and the development of the market.

5 Scale Analysis

5.1 The analysis of each factors

Based on the Like Te Scale, we add all items scores of each factor and calculate the specimen's average scores in each factor. The result is Communication--4.028, Preparation--3.181, Spread&feedback--2.895, Constant attention--2.748, Appeal—2.664, Co-development--1.702, Social interaction--1.543. From these average scores, we find the features of the customers involvement behaviour:

1. Before putting on line, the degree of the customer involvement is low, especially in co-development and the social interaction.
2. After putting on line, the degree of the customer involvement is high, especially in the part of communication
3. The customer involvement behavior after putting on line is much more active than that before putting on line.
4. The customer intellectual involvement is relatively less, while the emotional input is relatively more.

Though most of the respondents play the role of buyer, it is a trend that the roles of the customer involvement become diversified. And the behaviors of the customers have some features of the disseminator, the provider of information, the followers, and the co-developer.

5.2 Population Difference of the Customer Involvement

After doing ANOVA, if the sig. is less than .05, there must be some difference among the items. We discover:

1. Gender Differences

F2(Social interaction), F4(Appeal), F5(Communication) and F6(Constant attention) show the gender difference. The data indicates that the time and the emotion paid by women is more than that paid by men. And the male tend to appeal straightly. So for the male customers, the shopkeeper would better build more channels to guarantee their appeals. While for the female, they should pay more attention on the emotion marketing.

2. The differences of the online shopping times in half year

F2(Social Interaction), F5(Communication), and F6(Constant Attention) reflect the differences of the on-line shopping times in half year. The data indicates that the more frequently the customer do shopping on-line, the higher the average scores of all factors are. So we can conclude that the more customers doing shopping on-line, the deeper their involvement will be.

5.3 The Analysis of High-marked Group

We sift out the people whose total score is higher than 96 from the whole specimen. (their average score of each items is 4 or 5.) Because all items are positive questions, the sifted people's involvement in shopping is deeper than others. We call this group as high-mark group.

There are 83 people in the high-mark group, about the 17.29% of the total sample. Based on the diffusion of innovation theory, this group of people is the Innovators or the Early Adopters. Analyzing this group of people contributes to impact these people, and then impact the Late Majority and the Laggards.

From the data of gender, age, education background, monthly income, district, and the times of the online shopping in half year. We discover that most of the high-mark group live in the eastern and coastal area(64%), are from 20 to 30-year-old(72%)undergraduates(63%), and their monthly income is less than 1000 RMB. Most of these people are female(82%) and they have done shopping online at least 5 times in the last half year.

5.4 The Analysis of the Customers' Attitude

In our questionnaire, there are questions about the customer's attitude, whether they agree with improving the involvement, whether they hope to diversify the forms of involvement in shopping, and which forms and aspects of involvement is their preference.

The data indicates that people hold a positive attitude to the improving the involvement of online shopping. And they're more likely to communicating with the shopkeepers in order to help them make right decisions. However, people are less interested in involving in the creation and design.

6 Conclusion

6.1 The research findings

- Enrich the customer Involvement Theory, give the 7 dimensions of the customer involvement in E-commerce 2.0--co-development, social interaction, spread & feedback, appeal, communication and constant attention.
- Develop a scale for the customer involvement, which gives reference for the future researchers.
- With multi-dimension data analysis of scale, we summarized the situation of the customer involvement of the E-commerce in China at present and gave suggestions to E-commerce industry for improving service and customer involvement.

6.2 Suggestions

- Hold more activities which can help customers improve their shopping decisions and less on intellectual contributions
- Build more channels to guarantee customers appeals. Try to remain the existing customers and attract more potential customers
- Start to build your own SNS for the E-commerce
- Do data mining based on customers behavior to get better know about the market
- Improve the customer involvement based on the high-mark group's features.
- Pay attention to the gender difference

7 References

- [1] Piper Jaffray Companies is a leading, international middle market investment bank and institutional securities firm.
- [2] Peng Zhiqiang. E-business 2.0 coming, Computer le monde, 2006-7-3
- [3] Ralf VonSosen . The eCommerce 2.0 Handbook, 2007
- [4] Lovelock, C.H. Young, R.F Look to consumer s to Increase Productivity 1979(5-6)
- [5] Silpakit, P. and Fisk, R.P, "Participating" the service encounter: A Theoretical Framework .in Block, T.M., Upah, G.D. and Zeithmal, V.A.(Eds), Service Marketing in a Changing Environment[C].American Marketing Association, Chicago, Illinois, 1985
- [6] Cermak, Dianne S.P., Karen Maru File, and Russ Alan Prince. Customer Participation in Service Specification and Delivery[J]. Journal of Applied Business Research, 1994, 10(2):90-100

[7] Karthik Namasivayam., The Consumer as “Transient Employee”: Consumer Satisfaction Through the Lens of Job-Performance models[J]. International Journal of Service Industry Management, 2003, 14(4):420-435

[8] Silpakit, P. and Fisk, R.P, “Participating” the service encounter: A Theoretical Framework. in Block, T.M., Upah, G.D. and Zeithmal, V.A.(Eds), Service Marketing in a Changing Environment[C].American Marketing Association, Chicago, Illinois, 1985

[9] Kellogg, D.L. Youngdahl, W.E. Bowen, D.E On the relationship between customer participation and satisfaction: Two frameworks 1997(03)

[10] Christine T. Ennew, Martin R Binks. Impact of Participative Service Relationship on Quality, Satisfaction and Retention: An Exploratory Study[J].Journal of Business Research, 1999, 46(2):121-132

[11] Peng Shijing. Customers participate in modern marketing. new observation, 1996-7