E-Service Attribute Analysis: An Application of Kano's Model

Nitipan Ratanasawadwat

Abstract—**The aim of the paper is to contribute to a better understanding of e-service attributes through an empirical investigation. Very limited studies have been directed towards understanding the implementing role of e-service attributes influencing customer satisfaction in online movie theatre settings. Therefore, this study apply an empirical investigation for implementing online movie theatre quality attributes using an integrated method of Kano's model to persuade customer satisfaction.**

Index Terms—**Customer satisfaction, e-service quality, Kano's model, online movie theatre.**

I. INTRODUCTION

Many traditional services are now online. The online channels, including Web channels, mobile channels, and online kiosk, remain critical channels for selling most products and services. Moreover, most marketers and customers perceive e-services as very promising. In this study the author investigates how young Thai adults perceive and apply e-service attributes to receive movie theatre services online (e.g., checking movie show time, reserve and purchase movie theatre tickets online, etc.) Kano's model of customer satisfaction is used to investigate the dynamics of e-service attributes.

The paper is organized as follows. First, a literature review on e-service attributes is presented. Next, the theoretical foundations for identifying different types of relationships between e-service attributes and customer satisfaction are summarized with special emphasis on different life cycles for e-service attributes. An empirical study using Kano's model of customer satisfaction is described. The paper is concluded with a discussion of the findings, suggestions for further research.

II. E-SERVICE ATTRIBUTES

A. Service Quality (Servqual)

Service quality was initially developed by Parasuraman *et al.* (1985) to define service quality by the difference between customers' perceptions and expectations on the service in question [1]. Consequently, service quality is composed of perceived service quality and expected service quality. While perceived quality can be defined as the customer's judgment about the general position and excellence of the service they

received, expected quality can be defined as the expectations about the service they will be received. In other words, service quality for a customer is defined as a measurement of the extent to which the offered service performance enables to meet with service quality expectations. The five dimensions of service quality are [1].

B. Reliability

Two aspects in the reliability factor are "doing what is promised accurately and dependably" and "doing it at the promised time". If an online retailer cannot make their customers to trust on the services provided, these customers would be dissatisfied with the retailer.

C. Responsiveness

The responsiveness can be defined into two aspects as "willingness to help customers" as well as "giving quick and prompt services in a timely manner". Under online transactions, however, context of "willingness to help customers" would not play much role since there might not have much of personnel involvement. Therefore, the main focus of responsiveness in this paper will be on "giving quick and prompt services", for example, the amount of time it takes to start up and load a Web page/mobile application is a big concern to the online users. It is quite important for online service providers to provide online transactions that are quick, but at the same time online users also expect Web sites/mobile applications to look visually appealing. To make a Web page/mobile application more visually appealing, the online service providers inevitably need to add more number and larger size of animations, pictures and/or sounds into their Web page/mobile application; as a result, increasing time it takes to start up and load that Web page/mobile app, which is judged negatively by users. Therefore, online retailers need to trade off between the visual appeals and the speed of their Web site/mobile app.

D. Assurance

The assurance factor is originally defined into three aspects as "knowledge of employee", "courtesy of employees" and "ability to inspire trust and confidence". Under online environment, the assurance factor in this paper is considered only as "knowledge/information to answer questions". This leads to the expectation of customers to get everything that they want through online channel. It can be considered as two perspectives; "the online service provider can be trusted" and "feel safe in your online transactions with the online service provider". Statistical Research Inc. (2001) demonstrates that users, around 50 percent, had worried about the issues about the leaking of information such as personal information and credit card information via online

Manuscript received September 10, 2014; revised November 26, 2014.
Nitipan Ratanasawadwat is with the Martin de Tours School of Management and Economics, Assumption University, Bangkok 10540 Thailand (e-mail: nitipanrtn@au.edu).

channel.

E. Empathy

One of the aspects in the empathy has to do with "personalizing/customizing of the online products/services". The Web site design could provide and get the personal attention. The high technologies also help to generate face to virtual face interaction.

F. Tangible

The visual aspects of the Web site and mobile application can be considered as visual contact between customers and online service provider. A fine appearance and functioning of Web sites is also considered as an important aspect. Frustrated customers or unsatisfied customers might quit their shopping online.

Technology Acceptance Model (TAM) [2]

G. Perceived Usefulness

The perceived usefulness could come from online transactions and develop performance of business such as online purchase and payment. It also helps to amplify services and provide numerous benefits. Various customers might use internet due to its convenient benefits.

H. Perceived Ease of Use

Davis (1989) defined that ease of use is considered as the assessment of each people due to the mental effort in using the new technology.

I. Perceived Enjoyment

Researchers recommended that enjoyment can be considered as emotions based on hedonic perspective. Enjoyment also leads to higher levels of repurchase intention [3]. Enjoyment in this report is defined based on the perception of enjoyable and fund of the online customers.

Electronic Service Quality (E-S-Qual)

Parasuraman *et al.* (2005) define 'online service quality' as "the extent to which a web site facilitates efficient and effective shopping, purchasing and delivery." [4] According to the definition, the concept of online service quality would cover from the pre-purchase phase (ease of use, efficiency, product information, ordering information, and personal information protection) to the post-purchase phase (delivery, customer support, fulfillment and return policy).

The differences between an online retailer and a traditional offline retailer are summarized here:

- *Convenience and efficiency*: online retailers offer more convenience of saving time and effort in comparing to the price for their online customers
- *Safety and confidentiality*: online customers are concerned more on safety, securities, confidentiality, and privacy.
- *Absence of person-to-person interaction*: online customers would have to interact more with technical interface.
- *Co-production of service quality*: online customers would play a more proactive role in co-producing the delivered service.

III. KANO'S MODEL OF CUSTOMER SATISFACTION

Kano's model of customer satisfaction is a well-known customer satisfaction model. The model was developed under the notation that not all product and service attributes have same role in satisfying customer needs. Kano's methodology can be used in service development by combining with SERVQUAL. Kano's model evaluates pattern of quality based on customers' satisfaction with specific product and service attributes and their degree of fulfillment [5]. Product and service attributes are classified into five categories that are 'basic', 'performance', 'exciting', 'indifference', and 'reverse'.

A. Basic, Expected or Must-Be Attribute

Expected attributes can be considered as minimum required features that customer naturally expect from a product or service. These attributes are taken for granted by customers when fulfilled; however, can result in dissatisfaction when they are not fulfilled. Therefore, they are not able to result in satisfaction, but can only produce dissatisfaction when not fulfilled.

B. One-dimensional or Performance Attribute

One-dimensional attributes produce both satisfaction and dissatisfaction. Satisfaction is proportional to the level of fulfillment of these attributes. In other words, the higher the attribute performance is, the higher the level of customer satisfaction will be. These attributes are the ones with which companies compete. A company will have competitive advantage over its competitors if its customers perceived that the company is superior on these attributes.

C. Exciting or Attractive Attribute

Attractive attributes produce satisfaction when delivered, but cause no dissatisfaction if not delivered. These attributes of product or services are something customers do not expect to receive from their service provider; therefore, even if these attributes are not delivered, they are not dissatisfied. When a service provider delivers unconscious needs that can make their customers delight, it is offering high value to them [5].

D. Reverse Attribute

Reverse attributes create a scenario when the higher the level of fulfillment of the attributes, the more dissatisfied is the customer.

E. Indifferent Attribute

Indifferent attributes create a scenario when the degree of satisfaction is not influenced by the level of fulfillment of the attributes.

Kano's model treats product and service attributes as dynamic attributes. In other words, these attributes may move to another category over time. The successful product or service attribute would follow a life cycle like beginning as indifferent, to attractive, to performance, and finally to basic attribute [6]. The life cycle can be explained like this. When an attribute is introduced to a market, customers may not feel very interested with it. In other words, they feel indifferent regarding to the new attribute. Then, when the new attribute moves into the growth stage of a market, customers may start to realize the new attribute's value and begin to feel attractive to it. In other words, they feel delight with the new attribute if be offered and fulfilled, but feel neutral without it. Then,

when customers get used to the attribute, they will begin to dissatisfy if this attribute later is offered in lower level than other companies offered. Eventually, when the attribute moves into the maturity stage of a market, most customers know its value. They will be dissatisfied if the attribute disappears or does not fulfilled them at a specific benchmark level in their mind.

IV. RESEARCH METHODOLOGY

The e-service attributes can be seen as a part of the augmented product, in addition to the traditional services of the movie theatre. In this study, the empirical investigation concerns all online service of movie theatre including booking ticket online, watching trailers online, SMS services online, web navigation, security and privacy of personal information, reliability of information, and availability of the e-service.

A. Sample

Pretest was conducted for reliability and validity of the study. The pretest study was conducted with 30 respondents. Based on the pretest, the number of e-service attributes and the wording of some e-service attributes were changed. The final study was conducted with 300 respondents participated. Most respondents are young Thai adults (approximately 97 percent of the sample are 35 years old or less), who are the typical users of this online movie theatre.

B. Questionnaire Survey

The Kano questionnaire is constructed which has a special pair of questions, one functional and one dysfunctional. The functional form of the question provides the respondent's reaction if the movie theatre has a certain e-service attribute, where the dysfunctional form of the question provides the respondent's reaction if the movie theatre does not have the attribute. For both forms of questions, respondents can answer in one of five different responses that range from 'enjoy it', 'expect it', 'neutral', 'can accept it', and 'dislike it'. A multi-item scale was developed under a framework of e-service quality and TAM. The final version of 15-item scale of e-service attributes was used.

V. ANALYSIS AND RESULTS

The data were analyzed with SPSS statistical software. Each attribute is classified according to Kano's classification scheme as either attractive (A), one-dimensional (O), expected (E), indifferent (I), reverse (R) or questionable (Q), as shown in Table I. If two or more categories are nearly or close so, the close one(s) will be indicated as alternative(s). In marketing perspective, this multi-category attributes might suggest us that we are dealing with two or more market segments.

For all respondents, the result found that customers consider having the security code that send to their e-mail or mobile phone after they pay online and they want to have an e-mail with their M-cash balance every month as basic attributes. For service provider side, a company should also design the website that can provide all contents in one page

because it is easy for them to find the necessary information in the website and can also save time with shorter loading time. Therefore, a service provider should provide the above attributes to improve customer satisfaction.

TABLE I: E-SERVICE ATTRIBUTES CLASSIFIED ACCORDING TO KANO'S

E-Service Attribute	Class.(%)	Alt.(%)
Has movie guru forum to answer the questions about current and old movies	A (50)	I (25)
Provides movie's schedule 7 days in advance on websites and application	O (46)	I (31)
Provides online live interaction	I (49)	A (26)
Provide Line with 4 on-air times per day to interact with customers	I (45)	O (41)
Cooperates with Mobile Map to calculate your travel time and direction to the selected theater	A (40)	O (14)
Offers online customized movie preference themes	A (46)	I (34)
Sends security code to your e-mail or mobile phone after you pay online	E (38)	I (29)
Sends you a cash balance of M-CASH via e-mail every month	E (37)	I (34)
Gives you QR code from online booking to scan and get into the theater right away	A (41)	I (24); E (23)
Provides new ways to pay online booking (ex. Counter service, ATM, Phone)	A (36)	I (26); E (22)
Adds star rating and review function for each movie	I (52)	O (40)
Can print tickets by yourself after online booking	I (65)	A (16)
Provides all necessary contents in one page	E (35)	I (34)
Creates a game application that point can be used to discount on snacks and beverages	A (46)	I (31)
Creates online game for customers to answer and get reward	A (45)	I (27)

A: Attractive   E: Expected   O: One Dimensional   I: Indifferent

Many customers prefer to be able to check the movie schedule for one week in advance. A movie theatre should always update and provide all movie schedules for one week in advance via online channels; therefore, would result in attracting more customers to use online services. Providing movie schedules for the next serven days on websites and mobile application should help customers to plan and manage their time easier.

The attributes, that would make customers attract to a movie theatre, are 'guru forum to answer the questions about movies', 'the app that can provide directions and traveling time to the theater', 'options for customizing movie theme ', 'QR code for scanning to get into the theater', 'more ways to pay for the tickets', 'game application which rewards snacks in the real world', and 'Q&A game for reward'.h their schedule and for Major, they can control their schedule to be easier for managing.

We found that customer do not care about interaction with Major via online by 48.66% of respondent answer that online live interaction is indifferent and 44.67% of respondent also mention about indifferent of 4 on-air times per day to interact with Major's customers. Moreover, the result shows that do not interest in providing review because it seems boring activity and customers also do not want to print ticket by themselves either they book at the cinema or not by almost

65% of respondent answer in the same way.h their schedule and for Major, they can control their schedule to be easier for managing.

We found that customer do not care about interaction with Major via online by 48.66% of respondent answer that online live interaction is indifferent and 44.67% of respondent also mention about indifferent of 4 on-air times per day to interact with Major's customers. Moreover, the result shows that do not interest in providing review because it seems boring activity and customers also do not want to print ticket by themselves either they book at the cinema or not by almost 65% of respondent answer in the same way.interpret Kano O,Q and I

VI. DISCUSSION AND CONCLUSION

This empirical investigation applied Kano's model as a tool for explaining the role of e-service attributes in the service encounter, rather than as a tool for product and service development. The study explored online movie theatre services with fifteen attributes using Kano's model of customer satisfaction to identify attribute category.

REFERENCES

[1] A. Parasuraman, V. Zeithaml, and L. Berry, "A conceptual model of service quality and its implications for future research," *Journal of Marketing,* vol. 49, no. 1, pp. 41-50, Fall 1985

[2] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quarterly,* vol. 13, no. 3, pp. 319-340, 1989.

[3] E. C. Hirschman and M. B. Holbrook, "Hedonic consumption: emerging concept, methods and propositions," *Journal of Marketing,* vol. 46, no. 3, pp. 92-101, 1982.

[4] A. Parasuraman, V. A. Zeithaml, and A. Malhotra, "E-S-Qual: a multiple-item scale for assessing electronic service quality," *Journal of Service Research*, vol. 7, no. 3, pp. 213-233, 2005.

[5] N. Kano, N. Seraku, F. Takahashi, and S. Tsuji, "Attractive quality and must-be quality," *The Journal of the Japanese Society for Quality Control*, vol. 14, no. 2, pp. 39-48, 1984.

[6] N. Kano, "Life cycle and creation of attractive quality," presented at the Fourth International QMOD Conference on Quality Management and Organisational Development, University of Linkö ping, Linkö ping, 2001.

Nitipan Ratanasawadwat currently is a full-time lecturer at Martin de Tours School of Management and Economics, and Ph.D. candidate at Assumption University of Thailand.