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A Study Of E-Service Applications In E-Commerce Websites

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ABSTRACT

E-Services use the internet as the main channel for business to interact and communicate with their consumers. The purpose of this paper is to study e-Service applications, for example, FAQs and text chat, which e-commerce consumers prefer to use when they want to acquire more information about products. We focus on four different types of questions consumers may ask which are (1) description question, (2) method question, (3) explanation question, and (4) comparison question. Also, in this study, we categorize products into two categories: (1) general or non-embarrassing products (such as shampoo) and (2) embarrassing products (such as condom). The data was collected from 400 respondents in Thailand.

Keywords: e-Service, e-Service Application, e-CRM, FAQs, Text Chat, Perceived Interactivity, Embarrassing Product

Introduction

E-services are considered crucial for customer relationship management in B2C e-commerce environment (e-CRM) where consumers and vendors do not meet face-to-face interaction. A click of mouse is enough for an online consumer to select a new retailer [22]. Therefore, appropriate and efficient e-service applications are needed in all online shopping website.

According to Accenture [9], 77% of consumers said that the use of e-service applications, such as email, product comparison, online ads, and online ordering, improved their product purchasing experiences. 66% of consumers said that e-service applications, such as text chat and FAQs improved the level of customer service.

It was also found that consumers are embarrassed when purchasing some specific products, such as condom [3, 4], or feel nervous when talking to a salesperson about specific subjects [7]. Grace (2007) found that consumer embarrassment was mainly from the interaction of service provider, consumer and other persons (such as other consumers). It seems that e-services can help reducing consumer embarrassment because with e-services, consumers can avoid unwilling confrontation [14].

In e-commerce environment, a consumer can get product information from various e-service applications, such as FAQs, text chat, email, VoIP, and video chat. Consumers who have any types of questions (questions concerning description, method, explanation or comparison of products) can use some kinds of e-services to obtain their answers. E-service users are consumers who interact with some kinds of e-service applications. For e-retailers, it is important to provide most preferable e-service applications for their consumers in different situations, for example, when product types are different or when consumers have different types of questions. The results of this study can help e-retailers to improve their website quality by providing appropriate applications to facilitate their consumers. In addition, this study also investigates consumer perceived interactivity in different e-service applications.

Literature Review

E-service Applications

E-Service applications which are commonly used can be categorized into two types [19, 24]: (1) Customer-facing applications or applications consumers interact directly with a company representative and (2) Customer-touching applications or applications consumers interact with a computer program instead of a company representative.

It was found that consumer's preferred level of interactivity was based on situation and personal characteristic of that consumer [5]. Therefore, when product types or question types are different, consumer may choose to use different e-service applications.

Product Types

Different types of products can affect consumer behavior differently [23]. In addition, purchasing decision of consumer also depends on product types, product involvement and other factors [20]. E-service applications help consumers to avoid face-to-face communication or interaction [14]. This is particularly important when a consumer is dealing with sensitive issues, such as buying embarrassing products.

Prior research found that embarrassment in purchasing product can affect the selection of customer-facing applications, i.e., text chat, VoIP and video chat. The past studies indicated that people used all three formats of customer-facing applications when considering non-embarrassing products such as shampoo. However, when considering purchasing embarrassing products such as condom, people preferred text chat [10].

This study aims to contribute to e-CRM research field by proposing one of customer-touching applications, FAQs, which seems more appropriate when consumers consider embarrassing products [21].

Question Types

In e-service environment, consumers can obtain information directly from e-retailer's website rather than having to interact with salespersons in a physical store. Consumers also believe that they will get more information online [25], partly because their questions can be answered via online channel [1].

Kwon (2007) studied the effect of question types on the effectiveness of collaborative chat reference service in library and found that question type has influence on richness of user's answer and user's satisfaction.

The past research has proposed that different question type can affect search behavior differently [15] and that different communication channels can influence consumer information richness differently [17].

Research Methods

E-service Applications

In this research, we focused on two types of e-service applications: (1) Text chat, as a representative of customer-facing applications, and (2) FAQs, as a representative of customer-touching applications.

Product Types

In this study, we categorized products into two types: (1) embarrassing products, and (2) general or non-embarrassing products. We selected condom as a representative for embarrassing product because condom purchase was commonly associated with embarrassment [3, 4]. Shampoo was selected as a representative of non-embarrassing products. Prior studies [10, 12] reported that, shampoo gave consumers the lowest level of embarrassment for the personal care products.

Question Types

In this research, we used Primary Taxonomy [17] to categorize consumer questions into four types. These types include (1) description questions or questions which need answers that contain description, such as definition and concept, (2) method questions or questions which need answers that contain method, such as procedure and calculation, (3) explanation questions or questions which need answers that contain explanation, such as goal orientation and causal antecedent, and (4) comparison questions or questions which need answers that contain comparison, such as concept comparison and improvement. Some examples of each question types are shown in Table 2.

Perceived Interactivity

Perceived Interactivity (PI) is defined as the level of interaction that a user/consumer perceives as he/she uses a particular e-service. Perceived Interactivity can also be defined as how an e-service is responsive to user/consumer needs [2].

Research Question

The main objective of this study was to find out the e-service applications which were most preferred by e-commerce consumers:
- (1) when the product types were different
  - a. Embarrassing Product
  - b. Non-embarrassing Product
- (2) when the question types were different
  - a. Description Question
  - b. Method Question
  - c. Explanation Question
  - d. Comparison Question
- (3) when both product types and question types were different.

In Addition, we investigated consumer perception of interactivity in the context of e-service applications.

Research Instrument Development

In this study, we selected a self-report questionnaire as the research instrument. The questionnaire had five parts. In the first and second parts of the questionnaire, the respondents were asked to answer questions to measure perceived interactivity for FAQs and text chat, consecutively, as shown in Table 1. In the third and fourth parts of questionnaire, the respondents were asked to select the most preferable e-service application for each question types when product types are embarrassing product and non-embarrassing product, consecutively, as shown in Table 2. Finally, in the last part of

the questionnaire, there were demographic question, as shown in Table 3.

Measurement

Measurement for perceived interactivity was adapted from [2] using a five-point likert scale. The Cronbach's alpha coefficient values for the measures were 0.765 and 0.761 for perceived interactivity of FAQs and text chat, consecutively.

Data Collection-Subjects

It was reported that 31.8% of Internet users in Thailand, are between 30-39 years old and 28% of them are between 20-29 years old [16]. Therefore, we selected samples between 20-39 years old as our main group of subjects. The data were collected from 400 respondents in Thailand. Most of respondents have internet experience more than 7 years. Especially, nearly 2/3 of them have online shopping experiences. A summary of demographic information of those 400 respondents is shown in Table 3.

Table 1 – Items of measurement, mean score value and standard deviation for Perceived Interactivity

Item	FAQs		Text chat	
	Mean	S.D.	Mean	S.D.
Interacting with this FAQs/Text chat is like having a conversation with a sociable knowledge and warm representative from the company.	2.91	0.750	3.70	0.690
I felt as if this FAQs/Text chat talked back to me while I was navigating.	3.06	0.879	4.08	0.612
I perceive the FAQs/Text chat to be sensitive to my needs for information.	3.19	0.851	3.52	0.742
My interaction level with the FAQs/Text chat was high.	2.89	0.932	3.99	0.754
I don't interact with the FAQs/Text chat much*	2.91	0.991	3.89	0.880

* Item with reverse value

Table 2 – Questions for each question type and each product type

Product Types	Question Types	Item
Embarrassing Product (condom)	Description	What are the benefits of aloe vera concerning the lubrication of condom?
	Method	How to put on condom without touching?
	Explanation	Which condom has smooth surface, lubricant and rose smell?
	Comparison	What are the differences between condom A and B?
Non-embarrassing Product (shampoo)	Description	What are the benefits of grape-seed oil in a shampoo?
	Method	How to use a spa shampoo?
	Explanation	Which shampoo, with rose oil, is best for frizzy and unmanageable hair?
	Comparison	What are the differences between shampoo A and B?

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Table 3 – Summary of respondents' demographic

Demographics		%
Gender	Female	58.4
	Male	41.6
Age	Less than 20 years	11.8
	20-29 years	63.7
	30-39 years	22.3
	40-49 years	1.3
	50 years or more	1.0
Internet experience	Less than 2 years	0.8
	2-4 years	1.8
	5-7 years	13.0
	7 years or more	84.5
Time spend on Internet per week	Less than 1 hour	0.3
	1-2 hours	8.3
	3-5 hours	16.8
	6-7 hours	10.0
	More than 7 hours	64.7
Online shopping experience in the past one year	None	27.1
	1 time	12.8
	2-3 times	24.6
	4-5 times	15.0
	6-10 times	9.3
	More than 10 times	11.3
Experience (both online and offline) in shopping for embarrassing product in the past one year	None	76.4
	1 time	6.8
	2-3 times	9.5
	4-5 times	3.8
	6-10 times	1.0
	More than 10 times	2.5

Data Analysis

Results on Perceived Interactivity

Table 4 – Mean score values of perceived interactivity for each e-service applications with Paired sample t-test

E-service Applications	Mean score	t	Sig. (2-tailed)
FAQs	2.99	-22.306	0.000
Text chat	3.84		

Paired sample t-test, as shown in Table 4, indicates that text chat associates with significantly higher perceived interactivity than FAQs.

Result on Selection of E-service Applications

We performed statistical analysis on the collected data, mostly proportional test. The results of data analysis are shown in Table 5 to Table 9.

Table 5 – Overall results of e-service application selection

E-service Applications	E-service Application Selection by Consumers	Sig. (1-tailed)
FAQs	62.4%	Yes
Text chat	37.6%	

Table 5 indicates that in general, without considering product types, FAQs is significantly more preferred by most consumers than text chat.

Table 6 – Results of e-service application selection when product types are different

Product Type	E-service Applications Selection by Consumers		Sig. (1-tailed)
	FAQs	Text chat	
Embarrassing Product	71.3%	28.7%	Yes
Non-Embarrassing Product	53.6%	46.4%	No
Sig. (1-tailed)	No	No	

We can conclude from Table 6 that (1) when product type is embarrassing product, FAQs is significantly more preferred by most consumers than text chat, (2) when product types is non-embarrassing product, FAQs is more preferred by most consumers than text chat., but not significantly different, (3) consumers prefer FAQs when product type is embarrassing product, but not significantly different from when the product type is non-embarrassing product, and (4) consumers prefer text chat when product type is non-embarrassing product, but not significantly different from when the product type is embarrassing product.

Table 7 - Result of e-service application selection when question types are different

Question Type	E-service Applications Selection by Consumers		Sig. (1-tailed)
	FAQs	Text chat	
Description	65.8%	34.2%	Yes
Method	66.1%	33.9%	Yes
Explanation	57.3%	42.7%	Yes
Comparison	60.6%	39.4%	Yes

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Table 7 indicates that in general, without considering product types, FAQs is significantly more preferred by most consumers than text chat for all types of questions.

Table 8 - Result of e-service application selection when product type is embarrassing product and question types are different

Question Types	E-service Applications Selection by Consumers		Sig. (1-tailed)
	FAQs	Text chat	
Description	71.3%	28.7%	Yes
Method	74.5%	25.5%	Yes
Explanation	67.7%	32.3%	Yes
Comparison	71.7%	28.3%	Yes

Table 8 indicates that when consumer want more information for embarrassing products, FAQs is significantly more preferred by most consumers than text chat for all types of questions.

Table 9 - Result of e-service application selection when product type is non-embarrassing product and question types are different

Question Types	E-service Applications Selection by Consumers		Sig. (1-tailed)
	FAQs	Text chat	
Description	60.25%	39.75%	Yes
Method	57.75%	42.25%	No
Explanation	46.75%	53.25%	No
Comparison	49.5%	50.5%	No

Table 9 indicates that when product type is non-embarrassing product: (1) consumers prefer FAQs when the question type is description question, significantly different from text chat, (2) consumers prefer FAQs when the question type is method question, but not significantly different from text chat, (3) consumers prefer text chat when question type is explanation question, but not significantly different from FAQs, and (4) consumers prefer text chat when question type is comparison question, but not significantly different from FAQs.

Conclusion

How to choose appropriate e-service applications for e-commerce websites depends on many factors, such as product type and consumer question types. This study indicated that most consumers preferred FAQs. However, text chat influences more consumer perceived interactivity than FAQs. When product types and question types were moderators, we found that consumers preferred different e-service applications. However, we also found some evidence that consumers did not use level of interactivity as a main factor to choose e-service applications. However, they use product types and question types as factors to choose the service. Consumers may choose to use FAQs and if FAQs is unable to answer their questions, then they will choose to use text chat.

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