

CUSTOMERS' PERCEIVED VALUE OF COMPLEMENTARY PRODUCTS AND SERVICES ON THE INTERNET AND BEHAVIORAL INTENTIONS

การรับรู้คุณค่าของผู้บริโภคต่อการนำเสนอสินค้าและบริการบนอินเทอร์เน็ต และพฤติกรรมการความตั้งใจ

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Abstract

The Internet opens the opportunity for businesses to enter to a new market and create a fierce competition among them. To gain competitive advantages and survive, e-businesses need to deliver value to their customers. This study investigates the impact of product and service complementarities offered by Business-to-Consumers-businesses on customer value and evaluates the influence of this perceived value on future customer behavior. An experiment was used a 2 x 2 x 2 x 2 between-subjects factorial design including four factors: product component, product range, online services, and offline services. Sixteen interactive travel websites were created to closely mimic the design of real travel websites. Results from 272 experimental subjects revealed that subjects perceived online services and product range offerings to be of greater value when the offering was bundled with a greater number of offline services rather than limited offline services. Additionally, a positive relationship between customers' perceived value and their future behaviors was found.

Keywords : Customer Value, Electronic Commerce, Behavioral Intentions, Experimental Design

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บทคัดย่อ

อินเทอร์เน็ตเปิดโอกาสให้ธุรกิจต่างๆ เข้ามาแข่งขันกันได้มากขึ้น เพื่อการได้เปรียบในการแข่งขันและการอยู่รอด ธุรกิจอิเล็กทรอนิกส์จำเป็นต้องนำเสนอสิ่งที่มีคุณค่าต่อผู้บริโภค การศึกษานี้เป็นการศึกษาถึงการรับรู้คุณค่าของสินค้าและบริการที่เสนอโดยธุรกิจอิเล็กทรอนิกส์โดยใช้การทดลองแบบ $2 \times 2 \times 2 \times 2$ between-subjects factorial design ซึ่งประกอบด้วย 4 ปัจจัย คือ ส่วนประกอบของผลิตภัณฑ์ จำนวนของผลิตภัณฑ์ การบริการออนไลน์ และการบริการออฟไลน์ การทดลองได้มีการสร้างเว็บไซต์ท่องเที่ยวขึ้น 16 เว็บไซต์ โดยสร้างให้คล้ายกับเว็บไซต์ท่องเที่ยวจริงมากที่สุด ผลการศึกษาจาก 272 กลุ่มทดลองแสดงให้เห็นว่ากลุ่มทดลองรับรู้จำนวนของผลิตภัณฑ์ และการบริการออนไลน์ที่นำเสนอมีคุณค่ามากขึ้นเมื่อถูกนำเสนอควบคู่ไปกับการให้บริการออฟไลน์ที่มากขึ้น นอกจากนี้งานวิจัยนี้ยังพบความสัมพันธ์ในทางบวกระหว่างการรับรู้คุณค่าของลูกค้ากับพฤติกรรมของลูกค้าในอนาคต

คำสำคัญ : การรับรู้คุณค่าของลูกค้า พาณิชย์อิเล็กทรอนิกส์ พฤติกรรมความตั้งใจ การออกแบบเชิงทดลอง

Introduction

The Internet enables businesses to conduct their business online including marketing, selling and buying products and services, as well as communicating with their customers (Adam, 2002; Nicholls & Watson, 2005). While organizations exploit the Internet to reach global markets, save costs, improve their supply chain, and offer more products and services, customers' benefits from e-commerce are numerous including the convenience of shopping, the variety and range of choice of products, and cost savings (Turban et al., 2008).

The challenge for Business-to-Consumer (B2C) e-business is how to compete in e-commerce and increase customer purchase intentions (Razi, Tarn, & Siddiqui, 2004). Keeney (1999) as well as Chang, Torkzadeh, and Dhillon (2004) suggest that customer value plays a significant role in Internet commerce success. Customer value has been one of the main interests among marketers and researchers since it helps predict purchase behavior and

helps businesses learn how to gain competitive advantage (Cronin, Brady, & Hult, 2000; Kuo, Wu, & Deng 2009). Keeney (1999) argues that customer value in e-commerce includes not only the product offered but also the process of finding, ordering, and receiving. Additionally, Amit and Zott (2001) suggest that e-business can create and deliver value through offering complementary goods and/or services. The authors state that "complementarities are present whenever having a bundle of goods together provides more value than the total value of having each of the goods separately" (Amit & Zott, 2001, p. 504). The purpose of this study is to answer the question 'What is the value of complementary products and services in e-business?' Additionally, the relationships between customers' perceived value and their future behavior of using the website, will be investigated. This study will contribute to the knowledge of complementary products and services in creating value to customers on the Internet and enhance the understanding of

how B2C e-businesses can use complementary products and services as tools to create value to customers in order to better serve their customers in the competitive Internet arena.

Literature Review

Value is understood as a trade-off between benefits and costs (Zeithaml, 1988). In e-business, customer value is defined as the benefits the customer derives from transactions made through Internet purchases in terms of reducing costs in obtaining information about the price and product features of seller's offerings (Han & Han, 2001). This study considers the customer value in both monetary and non-monetary measures, in between the benefits gained from product and service complementarities offered by B2C e-business and the costs incurred acquiring the products. In the marketing literature, complementary products are defined as those chosen to fill different aspects of a consumer's need and are usually consumed jointly (Walters, 1991). This means that the consumption of one product enhances the consumption of the other (Chernev, 2005). In addition, the studies of Harlam et al. (1995) and Herrmann, Huber, and Coulter (1997) indicated that customers prefer closely related bundle components to either moderately or unrelated components. Thus, it is hypothesised that:

H1: The more closely related complementary products and services in a bundle are, the greater is their perceived value.

In addition to product components, the

number or the size of the product and service offering is also important in constructing bundles (Ansari, Siddarth, & Weinberg, 1996). Wyner (2001) has reported that by a ratio of two to one online users believe that they get a better selection of items tailored to them when they shop online. Furthermore, increased product selection in the online shopping environment enhances customer satisfaction in comparison to in-store shopping (Burke 2002). Moreover, research has found that choice of products offered by B2C e-business also influences customer loyalty, as revealed by Srinivasan et al. (2002). Thus, it is hypothesised that:

H2: The wider the bundle range of complementary products and services, the greater is their perceived value.

The internet also can be used to create value by providing complementary services. Levenburg (2005) suggests that retailers can use the Internet to add value to products and services offered by providing more online services, particularly those that may be used by customers in the acquisition process. This was supported by Burke's (2002) findings. The author found that, for online shopping, customers want to have the ability to pay online, receive an email message confirming their purchase order and shipment, track the shipment using the Internet, and communicate with a customer service support team via email, if required. Therefore, it is hypothesised that:

H3: The greater the number of online buying services complementary there are, the greater is their perceived value.

E-Businesses are also able to create value through providing their offline service complementarities. A combined web store and physical store, can create value for customers in any phase of the purchasing process from pre-purchase, purchase, to post-purchase (Steinfeld, Bouwman, & Adelaar, 2002; Amit & Zott, 2001; Zhu, 2004). Thus, it is hypothesised that:

H4 : The greater the number of offline services complementary there are, the greater is their perceived value.

Apart from the four main effects (H1-H4), this study will evaluate the combination effects of these four main factors, which includes two-factor, three-factor and four-factor interaction effects. As a result, hypotheses (H5–H15) have been developed as shown in Table 1.

Table 1 Interaction effects Hypotheses

Two-Factor Interaction

Interaction Effects of Product Component and Product Range

H5: That the product component effect on customers' perceived value will be stronger when a wide range of complementary products and services are bundled rather than a narrow range of complementary products and services.

Interaction Effects of Product Component and Online Buying Service

H6: That the product component effect on customers' perceived value will be stronger when a greater number of online complementary services are bundled rather than limited online complementary products and services.

Interaction Effects of Product Component and Offline Service

H7: That the product component effect on customers' perceived value will be stronger when a greater number of offline complementary services are bundled rather than limited offline complementary services.

Interaction Effects of Product Range and Online Buying Service

H8: That the product range effect on customers' perceived value will be stronger when a greater number of online complementary services are bundled rather than limited online complementary services.

Interaction Effects of Product Range and Offline Service

H9: That the product range effect on customers' perceived value will be stronger when a greater number of offline complementary services are bundled rather than limited offline complementary services.

Interaction Effects of Online Service and Offline Service

H10: That the online services effect on customers' perceived value will be stronger when a greater number of offline complementary services are bundled rather than limited offline complementary services.

Three-Factor Interaction*Interaction Effects of Product Component, Product Range and Online Service*

H11: That the effects of the product component and product range on customers' perceived value will be stronger when a greater number of online complementary services are bundled rather than limited online complementary services.

Interaction Effects of Product Component, Product Range and Offline Service

H12: That the effects of the product component and product range on customers' perceived value will be stronger when a greater number of offline complementary services are bundled rather than limited offline complementary services.

Interaction Effects of Product Component, Online Service and Offline Service

H13: That the effects of the product component and online service on customers' perceived value will be stronger when a greater number of offline complementary services are bundled rather than limited offline complementary services.

Interaction Effects of Product Range, Online Service and Offline Service

H14: That the effects of the product range and online service on customers' perceived value will be stronger when a greater number of offline complementary services are bundled rather than limited offline complementary services.

Four-Factor Interaction Effects**Interaction Effects of Product Component, Product Range, Online Service and Offline Service**

H15: That the effects of the product component, product range, and online service on customers' perceived value will be stronger when a greater number of offline complementary services are bundled rather than limited offline complementary services.

One of the significant marketing behavioral outcomes of perceived value is its contribution to purchase intentions. Prior research has suggested that the perception of value plays an important role in predicting the purchase behavior of consumers (Chen & Dubinsky, 2003). Chen and Dubinsky (2003) examined the relationships among four key variables of perceived customer value in a business-to-consumer e-commerce setting, including: (1) valence of online shopping experience, (2) perceived product quality, (3) perceived risk, and (4) product price, and their relationship to online shoppers' value perceptions. Multiple regression analysis results revealed that there was a highly significant positive relationship between customers' perceived value and online purchase intentions. The studies of Zeithaml et al. (1996), Kim (2004), and Parasuraman et al. (2005) also support the positive relationship between perceived service quality, value, and behavioral intentions. Therefore, it is hypothesized that:

H16: Customers' perceived value of products and services complementarities is positively related to customers' behavioral intentions.

Methods

Research Design

A 2 x 2 x 2 x 2 between-subjects factorial design was employed to test the proposed hypotheses with two product *component* levels (closely related and mixed-related), two product *range* levels (wide and narrow), two *online* buying service levels (greater and limited), and two *offline* service levels (greater and limited) as shown in Table 2.

Sixteen interactive hypothetical travel websites were created from the four main factors to closely mimic the design of actual travel websites using Macromedia® Dreamweaver®. The online travel industry was used because it contains all kinds of complementary products and/or services and is the dominating business among online consumer sales providers (Rosen & Howard, 2000; ComScore, 2002, cited in Kim & Leong, 2005).

The experimental websites were created along with the scenario of travel with a friend to Phuket, Thailand for the period December 1-8, 2007, with a AU\$ 5,000 budget for their trip. The experimental websites were manipulated for the treatment conditions as proposed in Table 2.

Table 2 Research Design

Profile Number	Online	Component	Range	Offline
1	Limited	Closely related	Wide	Greater
2	Limited	Closely related	Wide	Limited
3	Limited	Closely related	Narrow	Greater
4	Limited	Closely related	Narrow	Limited
5	Limited	Mixed-related	Wide	Greater
6	Limited	Mixed-related	Wide	Limited
7	Limited	Mixed-related	Narrow	Greater
8	Limited	Mixed-related	Narrow	Limited
9	Greater	Closely related	Wide	Greater
10	Greater	Closely related	Wide	Limited
11	Greater	Closely related	Narrow	Greater
12	Greater	Closely related	Narrow	Limited
13	Greater	Mixed-related	Wide	Greater
14	Greater	Mixed-related	Wide	Limited
15	Greater	Mixed-related	Narrow	Greater
16	Greater	Mixed-related	Narrow	Limited

Appendix A showed the sample of hypothetical travel website used in the study. All other information, for example, product and service information, price and website design, and website name were consistent across the 16 websites.

Manipulation checks

Manipulation checks were performed on the levels of independent or treatment variables, as design in the research design, to ensure that the subjects' perceptions of products and/or services offered by the hypothetical online

travel agencies were at the levels anticipated (see Table 3). In the manipulation check questionnaire, subjects were presented with one condition only, either high or low level, and were then asked to rate their perception on a given condition. A total of 70 postgraduate students participated in this manipulation test. Participants were randomly assigned one of the two sets of questionnaires, with either a low or high level of the treatment variables. The 26 usable cases from both groups were compared. Results of the analysis of variance (ANOVA) illustrate significant differences among

consumers' perceptions of high and low levels of: products *range* ($F = 30.632, p < 0.001$), *online* service facilities ($F = 22.803, p < 0.001$), and *offline* service facilities ($F = 7.880, p = 0.007$). The relatedness perceptions of each product or service offered together with airline tickets was also checked at the final part of the questionnaire. For closely related product and service components included products that have a mean score of equal or higher than 4.00, a mid-point score. In contrast, mixed-related product and service components included products and services that have a mean score of lower than 4.00, plus two related products and services, hotels and car hire, that are normally offered by existing travel agencies.

Research Process

The research sample for the experiments consisted of 272 subjects (17 subjects per cell), including 187 postgraduate business students

at a university in Victoria, Australia, and 85 friends who had purchased products online and willing to participate in this study. Data were collected by two methods: a paper-and-writing based survey; and a web survey. The 187 postgraduate business students were recruited from various classes who had purchased products online and were willing to participate in the survey. When subjects arrived at the computer lab, they were randomly assigned to and shown one of the 16 treatment websites. They were first asked to fill out the questionnaire in section one before browsing the website. Then they were asked to read through the scenario background information and the four tasks in section two and to type the link to the experimental stimulus website provided and complete the four tasks. After completing the four tasks, subjects were asked to fill out the questionnaire in section two.

Table 3 List of Four Independent Variables or Factors and their Levels Used in the Study

1. Product Complementarities: *Component* and *Range*

1.1 Closely Related *Component* and *Wide Range*

Flights Hotels Car Hire Rail Deals Holidays Travel Insurance Destinations Activities Restaurants Entertainment Credit Card Travel Guide
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1.2 Closely Related *Component* and *Narrow Range*

Flights Hotels Car Hire Travel Insurance Holidays Deals

1.3 Mixed-Related *Component* and *Wide Range*

Flights | Hotels | Car Hire | Cruises | Rails | Specialist | Working Holidays | Gifts |
Travel Shop | Credit Card | Money Services | Auctions | Gambling |

1.4 Mixed-Related *Component* and *Narrow Range*

Flights | Hotels | Car Hire | Travel Shop | Gambling |

2. Online Buying Service Complementarities (*Online Service*)

2.1 Greater Level of *Online* Service

- Search for & Select the Flights Online (Date/Destinations/Airlines/Prices)
- Booking Online
- Pay Online (with Credit Card)
- View Booking Online
- Online Help and email

2.2 Limited Level of *Online* Service

- Search for & Select the Flights Online (Date/Destinations/Airlines/Prices)
- Request for Seats Available Online
- Online Help and email

3. Offline Service Complementary Facilities (*Offline* Service)

3.1 Greater Level of *Offline* Service

- Call Centre : Available
- Travel Agency Retail Stores/Branch : Available

3.2 Limited Level of *Offline* Service

- Call Centre : Available
- Travel Agency Retail Stores/Branch : **Not** Available

At the same time, a web survey was employed to collect data from friends who had experienced buying products over the Internet, using a snowball sample. An invitation letter to participate in the research survey was sent to 16 friends via email. Each friend was randomly assigned 1 of the 16 experimental websites. The web survey was developed using the same content as the paper-and-writing based survey and provided the link to click through to the experimental website. After completing the survey, subjects were asked to send an invitation letter to their friends, and to ask their friends to send the e-mail in turn to their friends. The web survey was uploaded to the university's website on 16 different URLs, one for each condition.

Measurement

Customer-perceived value of complementary products and services offered by a travel website was assessed with the use of an 8 items value scale adapted from Kim (2004) and Parasuraman et al. (2005). The subjects were asked to rate each item using a seven-point Likert scale where (1) corresponds to 'Strongly Disagree' and (7) corresponds to 'Strongly Agree'. The scale items used to measure the construct *BI* were adapted from Kim (2004). The subjects were asked to rate each item using a seven-point Likert scale where (1) corresponds to 'Highly

Unlikely' and (7) corresponds to 'Highly Likely'.

Exploratory factor analysis (EFA) with principal components analysis and promax (with Kaiser normalisation) rotation was performed to check for construct validity. The results revealed that multiple indicators for perceived value and behavioral intentions were consistent with the two dependent variables. The factor loadings for the items were all positive, ranging from .547 to .918, above the cut-off value of 0.4 (Gefen et al., 2000). With the use of Cronbach's alpha, the values of the reliability coefficient for perceived value and behavioral intentions were in an acceptable range of .819 and .927 respectively. These coefficient alphas were higher than the acceptable cut-off point of .70 (Peterson, 1994). As a result, internal consistency appeared to be high.

Results

Hypotheses Tests: Main and Interaction Effects

The statistical ANOVA results from the univariate tests report on all main and interaction effects as shown in Table 4.

Main Effects (H1-H4)

Two of the four main effects were statistically significant; product range (H2) and online service (H3). Product range was highly significant, $F(1,256) = 15.666, p < .001$, and online service was significant, $F(1,256) = 4.844, p = .029$.

Table 4 Analysis of Variance Results of Main and Interaction Effects of Complementary Products and Services Offered by Hypothetical Travel Websites on Customers' Perceived Value with Partial Eta Squared Measures

Hypotheses	Effects	df	F	p	ηp^2
Main Effects					
H1	Product component (A)	1	0.088	.767	.000
H2	Product range (B)	1	15.666	.000**	.058
H3	Online service (C)	1	4.844	.029*	.019
H4	Offline service (D)	1	2.838	.093	.010
Two-Way Interaction Effects					
H5	A x B	1	0.076	.783	.000
H6	A x C	1	0.009	.925	.000
H7	A x D	1	2.790	.096	.010
H8	B x C	1	1.453	.229	.005
H9	B x D	1	1.036	.310	.004
H10	C x D	1	0.290	.591	.001
Three-Way Interaction Effects					
H11	A x B x C	1	1.761	.186	.006
H12	A x B x D	1	0.204	.652	.001
H13	A x C x D	1	1.344	.247	.005
H14	B x C x D	1	4.171	.042*	.016
Four-Way Interaction Effects					
H15	A x B x C x D	1	0.242	.623	.001
	Error	256			

* $p < .05$.

** $p < .01$.

Interaction Effects (H5-H15)

None of the six two-way interactions was statistically significant. One of the four three-way interactions, the Product range by Online service by Offline service interaction (H14), was statistically significant, $F(1,256) = 4.171, p = .042$. Finally, a four-way interaction was not statisti-

cally significant, $F(1,256) = 0.242, p = .623$.

The significant three-way interaction (H14) represents a complete picture of the study because it indicates that the two-way product range x online service effect differs at different levels of offline services (whether limited or greater). Three-way interaction between

product range, online service, and offline service illustrates that offline service moderates the relationship between customers' perceived value and product range and online service interaction. The effect size, partial eta squared (η^2), of this three-way interaction was small to moderate (.016), which means that the three-way interaction effects of product range and online service and offline service accounted for 1.6% of the total variability in the customers' perceived value.

Perceived Value and Behavioral Intentions

Results of the regression analysis as shown in Table 5 indicate that customers' perceived value was statistically significant in predicting

future behaviors at the .01 level, $\beta = .625$, $t(270) = 13.163$, $p < .001$. And the correlation coefficient (r), as shown in Table 6, was .625, which indicates a strong positive relationship between perceived value and behavioral intentions. Thus, the more value customers place on the product and/or service offerings, the more this indicates their favorable behaviors and intentions toward the e-business operators in future. Almost 39% of the variability in customers' future behavior can be explained by customers' perceived value ($R^2 = .389$, $F(1,270) = 173.264$, $p < .001$). Therefore, an increase in perceived value may suggest a moderated increase in future behavior

Table 5 Regression Analysis of Behavioral Intentions by Customers' Perceived Value of Products and Services Complementarities Offered by Hypothetical Travel Websites

<i>Independent Variable</i>	<i>B</i>	<i>SEb</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
Perceived Value	.877	.067	.625	13.163	<.001

Note. B: Unstandardized Coefficients, Beta: Standardized Coefficients

Table 6 Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.625	.391	.389	.95885

Note. $F(1,270) = 173.264$, $p < .001$. Customers' Perceived Value is the predictor variable.

Conclusion and Discussion

This study provides evidence of a difference in customers' value perception as a function of four complementary products and services offered between websites using online travel products: product component (closely related vs. mixed-related), product range (wide vs.

narrow), online service (greater vs. limited), and offline service (greater vs. narrow). This study revealed two main effects from the travel product range (H2) and online travel buying services (H3) on customers' perceived value. Additionally, the results showed an interaction (joint) effect of the three factors, product

range, online services, and offline services, on customers' perceived value (Hypothesis 14). However, except for these three factors, there was insufficient evidence to show any other joint effects of either two, three or four factors on customers' perceived value in this study. Further details are provided below.

Product Component and Perceived Value.

In this study, product component is not an important determinant for value perception. The findings in this study were not consistent with the studies of Harlam et al. (1995) and Herrmann et al. (1997). This might be because the scenarios and products used in the various studies were different. Additionally, subjects may have had low-involvement with the travel scenario offered in the experiment. Thus, they might not sense or perceive the difference between related or unrelated product components offered by the travel website.

Product Range and Perceived Value.

In this study, ranges of complementary products and services offered by travel websites can be used to enhance customers' perceived value. As expected, a wider travel product range results in higher customers' perceived value of the offerings. This suggests that product range can be used by e-business operators to enhance customers' perceived value of the offerings when shopping from the Internet. The findings in this study were consistent with the previous literature (Wyner 2001; Burke 2002), which found that customers want to have a better selection of items when they shop online. Additionally, product offerings in the online

environment have a significant impact on customer satisfaction (Burke 2002) and loyalty (Srinivasan et al. 2002). Customers also gain benefits from the lower search costs and minimized search effort required in acquiring product and services (Eakin&Faruqui 2000; McIvor et al. 2003). A wide product range offering, therefore, increases search convenience for customers in that they can identify and select products they wish to buy without having to search elsewhere (Seiders et al. 2000). With Internet technology, firms are able to use the Internet to form network collaborations with their partner firms to offer various products and services with the core services that mix and match to meet customer needs (Kandampully & Pomsivapallop 2005).

Online Service and Perceived Value.

This study confirms the study results of Burke (2002) that when shopping online, customers want to have several online service facilities provided to them from the pre-purchase to post-purchase phase. For example, customers want to be able to pay via secure websites, receive confirmation emails, and track their shipment online. As suggested by Lumpkin and Dess (2004), the Internet can be used to add value through four value-adding activities: search, evaluation, problem-solving and transaction. These activities add value by providing convenient transaction for customers when shopping online (Seiders et al. 2000). The travel company that provides customers with a greater number of online travel services may help customers save time and reduce searching or

other significant transaction costs (Seiders et al. 2000), which in turn creates value for customers.

Offline Service and Perceived Value.

No significant effect from offline services on customers' perceived value was found in this study. This is not consistent with Amit and Zott (2001), physical retail store (clicks-and-mortar) can be integrated to create value for customers in any phase of the buying process from pre-purchase, to purchase, to post-purchase. Burke (2002), Steinfield et al. (2002) and Zhu (2004) who suggest that physical retail stores (clicks-and-mortar) can be integrated to create value for customers in any phase of the purchasing process from pre-purchase, to purchase, to post-purchase. This might be because this study only used the pre-purchase stage of the travel scenario. Physical retail stores might be seen to be important at the post-purchase stage in exchanging or returning products after making purchases online (Burke 2002; Steinfield et al. 2002). Additionally, the travel products used in this study are service products, e.g. airline tickets. Customers are now able to get an electronic ticket instead of paper tickets. Therefore, subjects might not see the importance of physical store support in this study. However, offline services, especially a physical store, played a moderator variable role in enhancing customer value of product range and online service interactions.

Interaction Effect of Product Range, Online Services, and Offline Services on Customers' Perceived Value.

The evidence of the three-factor interaction

for product range, online service and offline service interactions on perceived value suggests that offline services can be used to enhance customers' perceived value of product range and online service offerings.

This is the most interesting finding of the study since it shows the complete story. The findings showed that offline travel services can be used to enhance perceived value of travel product range and online travel buying service offerings. This suggests that offline travel services may be used to provide complementary services for online travel sales. When buying online, people may want to have a physical store to support their online transaction, which in turn increases trust for online shoppers (Steinfield et al. 2002). A bundle of complementary physical stores with wide product ranges and greater online service complementarities, therefore, can help create value for customers in online shopping. By adopting the integration of these three complementary products and services, e-business operators are able to find new ways to add to customer value.

Thus, this study offers a theoretical extension to the B2C e-business value creation research stream by highlighting the role of complementarities as a source of customer value creation in B2C e-business. When a greater number of offline travel services are integrated, customers' perceived value of product ranges and online services are greater than with limited offline services.

Further analysis of this significance revealed that at the greater offline travel services level,

product range had an effect on customer value when combined with greater online travel service rather than limited. Therefore, it is suggested that in order to create complementarity value for customers, B2C e-business operators should offer a range of products together with a greater number of both offline and online services.

Perceived Value and Behavioral Intentions.

The results confirm a positive relationship between consumers' perceived value and behavioral outcomes. This supports the work of Kim (2004) and Parasuraman et al. 2005, who also found that consumers' perceived value was an important determinant of behavioral outcomes. People who perceive a high positive value in complementary products and services offered by an e-business operator are likely to do more business with that e-business operator in the future.

Implications for Practice

This study provides empirical evidence for the existence of complementary synergy between products and services offered in B2C e-business. The significant three-factor interaction of travel product range, online travel service, and offline travel service on value perception indicates that the integration of these factors reinforces the individual main effects and contributes to perceived customer value of these offerings.

Thus, B2C e-business operators should recognize the importance of the integration of these complementary products and services when offering products and services to customers. The interaction gives important insight into the true relationship among these factors and their effect on customers' perceived value more than considering one factor at a time. A bundle of a wide range of products, greater online service, and greater offline service complementarities will help increase the shopping convenience in providing the ability to search from a wide variety of products offered, transact orders purchased online, as well as the flexibility to access physical stores where customers are able to talk face-to-face with sales personnel. This, in turn, is more likely to create value for shoppers and increase their likelihood to do business with that B2C e-business operator in the future.

Limitations of the Study

In order to generalize the concepts, the first, future research on value creation using complementary product and service offerings should be extended to incorporate several types of products, including tangible products. Second, future research should improve the travel website created in this study by adding more information and services to make the website similar to a real travel website and the third, future research may replicate this study by using other population groups to verify the research findings.

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Appendix A –A Sample of the Hypothetical Travel Website Used in the Study

Welcome to L&N Travel
the lowest prices around! | Find a Store | Online Help | Contact Us | About Us |

Home | Flights | Hotels | Car Hire | Rails | Deals | Travel Insurance | Destinations | Holidays | Activities | Restaurants | Entertainment | Credit Card | Travel Guide

L&N Travel Home

From: To:

Return One Way

Departing Date:

Returning Date:

Adults: Children (2-11 yrs): Infants (<2 yrs):

Class of Service:

Need help booking? ☎ 1300 000 111

Latest Offers - Fly Cheap to Asia!
All Flights \$875* return.
Thailand, Singapore, Shanghai, Tokyo, Jakarta, Bali

Amazing Phuket
from \$965* return

Domestic Airfare Sale!
Limited places only
Melbourne to Cairns
return only \$145!

hotel brisbane
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Domestic Airfares		International Airfares	
Airfares include all taxes		Airfares include all taxes	
Adelaide	from \$105*	Bangkok	from \$875*
Melbourne	from \$89*	Auckland	from \$359*
Brisbane	from \$79*	London	from \$1869*
Cairns	from \$145*	Los Angeles	from \$1559*
Canberra	from \$115*	Paris	from \$1869*
Darwin	from \$265*	Rome	from \$1579*
Gold Coast	from \$59*	Singapore	from \$925*
Hobart	from \$74*	Vancouver	from \$1525*
Perth	from \$469*	Nadi	from \$655*

Holidays

Special Overseas Holidays

- Phuket
7 nights \$1438
- Las Vegas
4 nights \$621
- Singapore
4 nights \$1373
- Bangkok
4 nights \$1100