

## **Identifying Key Predictors for Users' Intention to Co-produce Value: Value Proposition Accordance and Other Potential Predictors**

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### **ABSTRACT**

The role of customers and users are changing from pure consumers to co-producers (Ramírez, 1999). Organizations which can effectively leverage competence and resources from its customers and users possess great competitive advantage by incorporating new sources of value creation and resource accumulation into its business model. Therefore it is important to identify how an organization can encourage its customers or users to participate actively in all kinds of value co-production activities.

Past researches indicate the possible cause to value co-production includes superior value proposition (Payne et al., 2008), motivation, perceived task clarity and competence (Lengnick-Hall et al., 2000). Value proposition, being the message to shape perceived value for customers and users, has never been conceptualized and operationalized in the consumer market context. In this study we will try to create a new construct named value proposition accordance, and examine if it's an effective predictor to value co-production intention. In the process we'll also test if perceived task clarity and self-efficacy can predict value co-production activity well.

The result of this quantitative research shows that value proposition is a strong predictor for value co-production intention, and perceived task clarity also has some effects but is a minor predictor. This study empirically shows that in order for an organization to leverage customers' and users' competence and resource, it is extremely important to have a value proposition that is in accordance with the customers' and users' value judgment.

**Keywords:** value proposition; value co-production; value co-creation

## 1. Introduction

The definition of “value co-production” (or value co-creation) is customers’ or users’ participation in tasks which usually done by the firm. A customer’s or a user’s competence and resource can prove to be very valuable for an organization. For example, web 2.0 business such as Facebook and Twitter relies heavily on users for content generation, and communication tools such as Skype relies on user to provide their hardware and bandwidth. There’re even firms that let’s customers and users provide their own design of products (von Hippel, 2006). Value co-production, however, is not a new phenomenon that only begins to appear. Bank has been asking customers to server themselves for a long time (Lovelock, 1979), and Ikea has been asking customers to assemble furnitures from components. In the process customer not only saved money, there’re actually more value created for the customers due to the fact that self-service might be more cost or time effective for the customers.

The reason why value co-production is so important in current business environment is that it creates additional source of value creation and resource accumulation, and act in a positive feedback fashion much like network externality (Katz & Shapiro). Thus if an effective value co-production mechanism presents in a business model, the organization will benefit a lot from the competitive advantage it gains. Past researchers have been trying to identify how an organization can enhance its ability to incorporate customers and users to co-produce value and had various propositions about this, including motivation, perceived task clarity and competence (Lengnick-Hall et al. 2000), and superior value proposition. The latter one, value proposition, is another construct has its importance emphasized by several scholars (Moore, 1991; Anderson et al., 2006). However so far there’s no study to verify the relationship between value proposition and value co-production empirically in a consumer market context.

Value proposition provides great influence over a business customer’s purchase decision (Moore, 1991; Anderson et al., 2006), as well as its possible contribution to value co-production activities (Payne et al., 2008). But there’s little research regarding how value proposition can be measured, and how exactly it will interact with other construct such as value co-production activities. Albeit the consensus is that value proposition can shape a customers perceived value for a particular product or server, the mechanism behind is remains unclear.

In this paper we’ll attempt to create a construct named value proposition accordance, which will influence customers’ value co-production activities. Measurements for value proposition accordance will be developed, and its relationship with value co-production will be verified using quantitative methods. We prove that users will contribute more when the value proposition message is in accordance with the value he possesses in long term memory, and other factors such as task clarity and self-efficacy also plays an important role in determining the frequency of value co-production activities.

## 2. Literature Review

### 2.1 Value co-production: value creation and resource accumulation from user-participation

The concept of value co-production is described in Ramírez(1999) as two or more economic actors create value for and with each other. Traditionally an actor in economy is either a producer or a consumer, leading to the conclusion that producers create value whereas consumer “destroys” value, but nowadays users / consumers can be seen as co-producers of value or even regarded as assets of a firm. Users / consumers started to take parts in more and more value creation activity, ranged from the very beginning of the value chain (i.e. demand recognition, R&D) to the very end of it (i.e. marketing, customer support, etc.). Value creation activities that a user / consumer can take part in can be summarized as Table 1:

Table 1: User / Consumer Participation in Value Creation Process

Value Creation Activity Involved	Example	What User Contributes	Citation
Provision of Infrastructure	<u>Skype / FON</u> utilizing user' s hardware	Installation of software or purchase hardware	Li(2005)
Research and Development / Knowledge Accumulation	<u>Google / Microsoft</u> invites user to beta-test or debug their program <u>NetFlix/ Amazon</u> invites user to write review for their product	Effort and Knowledge	Sweet(2001) Von Hippel(2006)
Produce (Product)	<u>Ikea</u> Let user assemble furniture parts themselves	Effort	Remiréz(1999)
Produce (Information)	<u>Banks</u> Collect customer' s purchasing information for use in later marketing activity	Effort	Sweet(2001)
Increase Product Utility	Telephone, Fax	Usage	Katz & Shapiro(1986)
Customer Service	Seagate put all manuals online to let customer serve themselves	Effort	Sweet(2003)
Marketing (Information)	Later adopter ask early adopter for advice	Word Spreading	Arthur(1989)

Contagion)			
Marketing (Information Cascading)	Opinion leader decides the price of artwork	Word Spreading	Crossland and Faye(2002)

As Table 1 suggests, user / consumer is able to participate in more and more value creation activities, therefore user participation has been an important element of business model for many new Internet startups. The latest marketing buzzword “Web 2.0” actually encouraging Internet firms to identify and utilize the mechanisms listed in Table 1.

There’s no doubt that users can now participate in value creation activities in so many ways to create value for themselves and for other customers. Customers can serve themselves by assemble furniture they purchased or by reading through the troubleshooting knowledge base on the vender’s website. Infrastructure and production equipment were supplied by firms in the past, but thanks to the advancement in distributed computing and storage technology firms can now utilize CPU, storage device and even Internet bandwidth of their customers to serve other customers. Users even participate in marketing activities actively by word of mouth or by promoting their favorite hardware and software online.

On the other hand, some types of value co-production listed in Table 1 could be helpful for an Internet startup to capture value or to maintain the option to capture value in the future. Amit & Zott(2001) stated that there’re four sources of value creation for an e-Business model: Novelty, transaction efficiency, lock-In and complementary. However, judging from the definitions of the latter two, they are more related to value capture. In Table I there are many mechanisms that could trigger lock-in effect and / or provides complementary assets for the product / service provided. In these cases users tend to keep using the service / product as he or she became more locked-in to it, and users’ usage further ensures that the complementary assets are in place for the product / service to create value for the users in the long run. This way the focal firm can create entry barrier and appropriate future value capturing opportunity.

## 2.2 The importance of value proposition and the difficulty of operationalization and conceptualization

Value proposition is often regarded as the building block of a business model. It is used by an organization to express the value of the products or services it provides, as well as some long term value an organization holds. Value proposition messages can be delivered in many different forms, but mostly value proposition is expressed in text. As discussed in Bowman & Ambrosini(2000)’s framework of value creation and value capture, value proposition works as reference for customer’s perceived value. If the value proposition message fits a customer’s value and belief in his/her long term memory (Wan, 2008), he or she will experienced a higher perceived value, therefore increasing the perceived value for a particular product / service, and in turn increasing

the ceiling of exchange value, which means greater opportunity to get more profit for a product or service provider. Value proposition can also serve as a motivator for value co-production activity; superior value proposition can lead to more engaged co-production action (Payne et. al, 2008).

There have been some literatures discussing about how properly constructed value proposition will help increase sale in business market (Moore, 1991; Anderson et al., 2006). In business market, the decision to purchase is only based-on cost-benefit evaluation. An organization needs to identify the “resonating focus” of its offerings in order to construct a value proposition well-accepted by the customers to deliver a simple and yet clear message about the benefit the customer will get instead of just to list all possible benefits (Anderson et al., 2006). In a consumer market, though, the factors that will influence a customer’s purchase decision are much more complex. The content of value proposition can be far beyond cost-benefit comparison, and can be better described as a value palette (Elkinton et al., 2006). As an example, the English instant coffee vendor Café Direct has been using fair trade as a core value propositions. It ensures the income for coffee bean suppliers so that the families of the suppliers in third-world countries can maintain a decent lifestyle and can provide education to their children. More examples is Body Shop’s anti animal experimentation policy, or Google’s “Do No Evil” slogan also goes beyond cost-benefit evaluation, and ask customers to consider more than just economic value when they’re choosing products and services to use. The word “Value” not only includes the concept of “exchange value” in economics, but there’re more social elements such as moral standard, social consensus and religious beliefs that will affect a person’s value perception.

To sum it up, value proposition in a consumer market context contains much more elements than in the business market. And due to this nature, it becomes very difficult to conceptualize and operationalize value proposition as a construct. In this paper we’ll try to use “value proposition accordance” as a mechanism to predict its influence on value co-production activities. A message that’s in accordance with a receiver’s value in his long term memory is likely to impact his behavior intention (Wan, 2008), and we apply this attribute of message on value proposition, for the fact that value proposition is also a kind of message.

## **2. The relationship between value proposition and value co-production**

Why value co-production is so important is that it can trigger a positive feedback loop which will result in fast growth of new ventures. In Table I we can identify many types of value co-production with positive-feedback effect built-in. Take knowledge and information accumulation for example: knowledge and information contributed by the (or extracted from) the users turns into firm assets in the long run, becoming core resources for firms and enables them to provide better services, which brings in more new users / customers in turn.

Therefore, to embed value co-production mechanism in their business model is very important for a new venture to succeed. Customers, when participated in value co-production activity, are not only consumers that give out money, but also contributors that give out effort and knowledge. A well constructed value proposition, just like it can persuade a potential buyer to make purchase, can also persuade customers to contribute their effort and knowledge (Payne et al., 2008). But it is hard to determine what kind of value proposition is “superior” or “well-constructed”, due to the fact that each person has different life experience, there’s really no universal answer as to what kind of value proposition is “better”. A value proposition is destined to be agreed by some people, and to be disagreed by others. What a business can do is to indentify a market segment, and construct value proposition accordingly.

Messages can influence the behavior intention of the recipients, which is defined as “resonance” by Wan(2008). Resonance consists of three dimensions: expectation fitting, value accord and mental harmony, with the last one under the influence of the first two dimension. Here we’ll create a construct named “value proposition accordance” by applying the concept of value accord to value proposition, and examine if value proposition accordance is a main predictor for value co-production activities.

### **3. Research Propositions**

Value capture usually refers to the process in which a business gets monetary return from its customer (Bowman, C., & Ambrosini, B., 2000). In the context of network economy and value co-production, the value a business captured can also include customer’s knowledge, ability to create value for other customers, and other resources such as labor, infrastructure and so on. Value proposition, with the ability to shape the customers value perception toward the focus product service, will influence the willingness to contribute of a customer. A customer with better value proposition accordance will have the intention to contribute more. Therefore we have the following proposition.

H1: Better value proposition accordance will lead to higher value co-production intention of a customer.

The possible predictors of value co-production activities include motivation, task clarity, and competence (Lengnick-Hall et al., 2000). In this study the main source of motivation is the value proposition message. According to past research, task clarity has an impact on job performance (Teas at al, 1979). Customers with better perceived task clarity will be more willing to engage in value co-production behavior.

H2: Better perceived task clarity will lead to higher value co-production intention of a customer.

As described in Table I., there’re many different types of value co-production activities, and many of them requires skills to complete co-production tasks. However, if we’re to predict a user’s intention to participate in value co-production activities, then his self-efficacy would be a better predictor since we’re not evaluating the actual performance.

H3: Better customer self-efficacy will lead to higher value co-production intention of a customer.

In the following section we'll examine how value proposition accordancy, perceived task clarity affects value co-production intention.

## **4. Research Method**

### **4.1 Method, Sample, and Research Procedure**

In this study we used quantitative method to examine the important predictors for user co-production intention. The sample is the population of the participants of an IBM JAM-like online brainstorming session for discussing the youth development policy, in which more than four hundred people participated in a web forum discussion and generated more than one thousand posts in 72-hour time span.

For the brainstorming session more than ten thousands of invitation emails were sent, and more than four hundred people followed the instruction on the email to register to join the event. Then a questionnaire was sent to the people who registered, first asking to read through a detailed description of the event itself, which includes the agenda of the discussion session, the opportunity to join a post-event face to face discussion with some high level government officials in Taiwan, and some reward one might get from a lucky draw and from a competition for best post of the event. This message delivers the value proposition of the event in detail. After reading the message the users were asked to fill out the questionnaire regarding the three predictors we derived from literature, which are value proposition accordancy, perceived task clarity and self-efficacy, and their level of intention to participate in this co-production activity.

### **4.2 Measurements**

#### **4.1.1 Value Proposition Accordancy**

To measure value proposition accordancy, we use the phrases that were used in Wan(2008) and modified them to ask users whether he or she thinks that the content of value proposition is valuable or important to them. Different items were generated from the content of messages delivered to the potential participants of co-production activities. The items are based on intrinsic and extrinsic motivations definitions from Amabile(1993), due to the fact that value proposition serves as the main motivator of co-production participation in this study.

The result is an eight item measurement in 5 point likert scale. Some sample items include "The agenda of this discussion is valuable to me", "it is important for me to have an opportunities to interact with other people in this discussion session" and "the prizes for the best post competition is attractive to me"

#### **4.1.2 Measurement: Perceived Task Clarity**

We constructed items for perceived task clarity from Teas et al.(1979) Fournier(1996), mostly by modifying the items for role clarity to reflect the participants' understanding or their role in this event. The result is a six-item scale consists of items

such as “I have clear and planned goals when participating in this event” and “I have received clear explanation of what has to be done”.

#### 4.1.3 Measurement: Self-Efficacy

To participate effectively in the online brainstorming event, the self-efficacy that is most important is Internet self-efficacy. We use a modified ISES scale (Tsai & Tsai, 2010) to measure Internet self efficacy. Two items were added to the scale to measure self-efficacy toward the more advanced Internet activities including online game and online shopping. The result is a 15-item scale consists of items such as “I am confident to download files or images on the Internet” and “I am confident that I can shop on the Internet and make payment successfully”.

#### 4.1.4 Value co-production intention

In the online brainstorming event there are four ways that a participant that can contribute to the value co-production process:

- To browse the forums: all browsing activities will be recorded by the information system, and other participants can get an idea of what topics are most viewed by looking and the page hit number.
- To create a topic on the discussion forum: Any participant can create a topic that allows other participants to read and post follow-ups.
- To join a discussion topic created by other users: See above.
- To join the best post competition: to join the best post competition there're some pre-designed format and topic that a participant must follow, and the post must be posted to a specific forum to join the competition.

Four items were used to measure the intention of the participant to engage in each activity respectively. According to the effort took to execute each of the actions, the score will be weighted differently. The browsing activity score will be multiplied by 1, the article posting activities including topic creation and topic follow-ups will be multiplied by 2, and the score of the intention to join best post competition will be multiplied by 4.

## 5. Result

### 5.1 Descriptives

There're 94 samples in this study. Descriptive statistics are as below

- Gender: Male 52.1%; female 47.9%
- Age: 18 to 20 years old 23.4%; 21-25 years old 47.9%; 26-30 years old 19.1%; 31-15 years old 9.6%
- Job Status: Students 62.8%; Employed 37.2%

### 5.2 Measurements Reliability

There're two measurements that's specifically developed for this study: value proposition accordance and value co-production intention, both of which shows good



reliability. The cronbach's alpha value for the value proposition accordance items are 0.853, and for value co-production intention items the cronbach's alpha is .866. Both of which are quite acceptable.

For the two measurements we used modified version of existing items or scale also performed well in a reliability test. The cronbach's alpha for task clarity is .883, and the cronbach's alpha for Internet self efficacy is 0.948.

### 5.3 Criterion-related Validity

Since value proposition accordance is a new construct developed by this paper, it is important to show that it indeed are related to the concept we think it can predict to a certain extent. The correlation analysis between value proposition accordance and value co-products show significant relationship between the two constructs ( $p=0.000$ ) with a coefficient of 0.586. This shows that there's indeed criterion-related validity for the construct value proposition accordance.

### 5.4 Result of Regression Tests

Using linear regression in SPSS 17, we use value proposition accordance, perceived task clarity and Internet self-efficacy as impendent variable to predict value co-production intention. The regression model is significant ( $p=0.000$ ) and has a  $R^2$  of 42.7%. For the independent variables value proposition accordance ( $p=0.000$ ) and perceived task clarity ( $p=0.054$ ) are significant, but Internet self-efficacy failed to pass the significance test.

Furthermore, value proposition accordance alone contributes a  $R^2$  of 38.9%, so the contribution of perceived task clarity is significantly lower at 3.4%. From the result we can conclude that value proposition accordance is at least one of the prime predictor, while perceived task clarity also provide partial but minor explanation to value co-production intention of a user.

## 6. Conclusion and Discussion

Value proposition has long to be regarded as an important mean to shape a customer or a user's perceived value, and yet there're little past researches that tried to clarify what kind of value proposition will help a business to better attract their customers and users in consumer market. In this study we show that a value proposition that is in accordance to a customer or a user's judgement of value will have major impact on his intention to co-produce value with the organization.

We also found that perceived task clarity plays a minor role on value co-produciton intention, and the proposed Internet self-efficacy didn't proved to be affecting value co-production intention significantly. The reason might be that the skill requirement in this particular event is not that high, so the intention to participate in value co-production activity is not affected by Internet self-efficacy. However, self-efficacy might still play a role when the skill requirement is higher. It is suggested that self-efficacy still needs to be examined further as a predictor for value co-production activities.

The instruments developed in this paper provide acceptable reliability and validity, both the ones developed from this study and the ones that are derived from existing literatures. But for a new construct like value proposition accordance, a more formal scale development process will help greatly for future research on this construct.

## 7. Managerial Implication

Value co-production provides a mechanism for organizations to leverage knowledge and resources from their customers or users. Organizations with value co-precaution mechanisms have a greater change to trigger positive feedback effects on value creation and resource accumulation, and the factors identified in this study provides deep implication for both new ventures and existing organizations to facilitate value co-production. The fact that value proposition accordance being a major predictor for value co-production intention implies that an origination should review its value proposition thoroughly, to make sure it is in accordance with their target customers and users. Value proposition, when properly constructed, will not only provide major motivation for the customers and users to co-produce, but also increase the customers' willingness to purchase.

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