NURTURING SALES ENTREPRENEURSHIP IN CONSUMER-TO-CONSUMER MARKETPLACES

Research-in-Progress

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Abstract

Buyers and sellers jointly determine a market’s development and equilibrium. While the literature has focused on enhancing online marketplaces from the buyer’s perspective, designing marketplaces from the seller’s perspective has received much less attention. Practically, online consumer-to-consumer (C2C) marketplaces have nurtured business and created many job opportunities, evidenced by TaoBao, China’s leading marketplace. This study explores how online marketplaces nurture entrepreneurship from the seller’s perspective. Extending the task-technology fit model, we propose that the entrepreneurial sellers’ motivations to use online C2C marketplaces are to achieve financial security, independence, innovation, recognition, roles and self-realization. C2C marketplaces can be designed accordingly to facilitate information exchange, transactions, customization and back-end integration. We argue that a fit between the seller’s entrepreneurial tasks and technological characteristics determines the seller’s satisfaction, marketplace utilization, and sales performance. The proposed model is verified by 128 TaoBao sellers. We discuss the implications and next steps of this research.

Keywords: Entrepreneurial seller, online consumer-to-consumer (C2C) marketplace, task-technology fit, utilization, sales performance
Introduction

Internet-lubricated e-commerce has nurtured many online marketplaces, such as TaoBao (www.taobao.com), Amazon (www.amazon.com) and Alibaba (www.alibaba.com). These firms have helped individuals and small companies to establish an online presence. In parallel with the upsurge of e-commerce, entrepreneurship in online marketplaces (the act of establishing companies online) has received significant academic attention (e.g., McGowan and Durkin 2000; Kollmann 2006). Specifically, Shane and Venkataraman (2000) identified entrepreneurship as a legitimate field of research and called for in-depth investigations of Internet-based entrepreneurship.

Sellers, together with buyers, form the core of an online marketplace. Buyers only come when there are both a sufficient number of sellers and a sufficient choice of products. In reality, sellers have been the initiators and developers of most online markets (Bakos 1997) including consumer-to-consumer (C2C) marketplaces, such as TaoBao. According to a recent report1, there are more than 3.65 million sellers in TaoBao, which has facilitated the creation of 1.82 million direct employment opportunities. Although both sellers and buyers determine the development and the equilibrium of a market, as evidenced through the law of supply and demand, research on online markets has predominantly focused on the buyer side of the buyer-seller relationship (e.g., Barnes et al. 2007). Seller-side research has been scant, especially in online C2C marketplaces. Besides, although there are many functions in online marketplaces to serve entrepreneurial sellers (referring to those creating their own sales businesses online), research on entrepreneurial sellers and their efforts to succeed in online C2C marketplaces appears to be lacking.

In responding to these two research calls (Shane and Venkataraman 2000; Barnes et al. 2007), we seek to investigate how online sales entrepreneurship is nurtured with the aid of online C2C marketplaces by bringing business opportunities for entrepreneurial sellers to offer services to buyers. In this study, we developed a research model focusing on the seller’s perspective in participating in online C2C marketplaces. Specifically, we adapted the task-technology-fit (TTF) model (Goodhue and Thompson 1995) to theorize that an entrepreneurial seller’s motivations are to achieve financial security, independence, innovation, recognition, roles, and self-realization. In this study, entrepreneurial tasks thus focus on the extent to which a seller is motivated to become an entrepreneurial seller by joining the online marketplace. This is a process of converting motivations to actual activities so as to achieve the goals of entrepreneurial sellers. In order to fulfill these entrepreneurial seller motivations, online marketplaces can be designed accordingly to facilitate information exchange, transactions and backend integration, as well as provide sellers with features customized to their needs. We argue that TTF between these entrepreneurial sellers’ tasks and the marketplace’s functions can help achieve a higher utilization of the marketplace, satisfaction, and sales performance, three success variables for sellers.

We next develop our theory and justify a set of hypotheses. We then present some preliminary statistical results based on a pilot study of 128 entrepreneurial sellers in TaoBao. We conclude this research-in-progress paper with discussions, implications, and preparations for a large-scale study.

Theoretical Development

Individuals choose to adopt and utilize information technology (IT) to provide them with benefits. This suggests that IT will be utilized if and only if the IT functionalities support productive work. In the context of online C2C marketplaces, entrepreneurial sellers have several motivations, such as financial security, innovation, independence, self-realization, roles and recognition. By successfully using an online marketplace such as TaoBao, entrepreneurial sellers can implement their entrepreneurial motivations. In this study, entrepreneurial tasks highlight the activities implemented by entrepreneur sellers, a process of converting their motivations into activities so as to accomplish their goals. In this sense, TaoBao can be considered as a technology platform that offers a combination of IT functionalities that assists individual entrepreneurial sellers to accomplish their tasks successfully.

IT utilization in business is determined by the fit between tasks (e.g., entrepreneurial sellers’ tasks in our study) and attributes of the technology (e.g., functionality of a marketplace in our study) (Marcolin et al. 2000). TTF is achieved when task requirements match IT functionalities. The TTF model highlights the importance of the fit between technology and users’ tasks in facilitating performance. The TTF model has been used in many contexts, including knowledge management (e.g., Lin and Huang 2008), e-commerce (e.g., Klopping and McKinney 2004), and group support systems (e.g., Zigurs and Buckland 1998). There are several ways to conceptualize the concept of fit (see Yuan et al. 2010). In this study we use subjective stance to conceptualize fit because it means measuring fit from a user’s perspective, as explained below.

We argue that TTF is a suitable conceptual basis to explain the reasons for marketplace utilization from an entrepreneurial seller’s perspective. To successfully attract entrepreneurial sellers, an online marketplace should provide corresponding functions to help sellers establish their own businesses online. Such a match is believed to govern the utilization of the marketplace. The concept of TTF thus predicts the outcomes of the marketplace utilization and whether sellers desire to use the marketplace. We therefore apply the logic of TTF (Goodhue and Thompson 1995) into the current study and establish our overall research framework (Figure 1). We justify the proposed hypotheses in the following sections.

**Entrepreneurial Tasks and Task-Technology Fit**

Tasks are broadly regarded as the activities accomplished by individuals so as to convert inputs to outputs (Goodhue and Thompson 1995). According to Kolvereid (1996), motivations have a substantial influence on whether entrepreneurs start up their businesses and become involved in entrepreneurial activities (Krueger and Brazeal, 1994). We argue that motivations behind entrepreneurs encourage them to start up businesses. In this study, **entrepreneurial tasks** thus refer to the extent to which a seller is motivated to become an entrepreneurial seller by joining the online marketplace. This is a process of converting entrepreneurial sellers’ motivations into activities so as to accomplish their goals. The motivations, in which entrepreneurs engage in our study, are considered to be intentions (Anscombe 1956; Shaver 1985). In other words, the new venture creation process is generated by entrepreneurs’ intentions to achieve their desired motivations. The definition of entrepreneurial tasks highlighting entrepreneurial sellers’ motivations is in the line with the view of Zigurs and Buckland (1998) that the focus of tasks is allocated to stated goals. Therefore, the entrepreneurial tasks in this study focus on an individual’s motivation perception to complete the entrepreneurial tasks.

Previous studies on entrepreneurship have provided us with rich but diversified information to conceptualize entrepreneurial tasks. For example, Carter et al. (2003) covered the fragmented literature on entrepreneurship and developed an inclusive list of six items of entrepreneurial tasks. Firstly, **financial security** (Birley and Westhead 1994; Scheinberg and MacMillan 1988) or **financial success** (e.g., Knight, 1987) is considered as the major motivation for the entrepreneur-to-be. The second item of entrepreneurial tasks is **independence**, characterized as the extent to which an individual desires to have more control, freedom and flexibility for personal life (Schein 1978; Smith and Miner 1983). The third
item, *innovation*, describes the degree to which an individual achieves something new (McClelland 1961; McClelland and Winter 1969). The fourth item, *recognition*, collectively embraces recognition and the need for approval, depicting the degree to which an individual desires to have approval, status and recognition from people, including families, friends, and citizens within the society (Bonjean 1966; Nelson 1968). The fifth item, *roles*, delineates the extent to which an individual intends to continue family traditions, imitate an admired person or follow role models (Carter 1997). The sixth item, *self-realization*, depicts reasons involved with pursuing self-directed goals to startup the career or business (Buttner and Moore 1997; Carter 1997). We adapted this six-dimensional construct of entrepreneurial motivation (Carter et al. 2003) into the context of sales entrepreneurship, as explained below.

C2C marketplaces, such as TaoBao in the current study, can help individual sellers to accomplish the goal of becoming entrepreneurs. On C2C marketplaces, individual sellers can establish their own storefronts online. Entrepreneurial sellers’ efforts can be returned with financial earnings. Because physical shops are not required for sales operations in online marketplaces, online sellers have more flexibility in managing their time when operating online storefronts. TaoBao has been viewed as an innovative service provider of marketplace services since 2005, as discussed in Morgan Stanley’s industry report (Ji and Meeker 2005). By joining TaoBao, entrepreneurial sellers can utilize the innovative and forefront of technology to create their own businesses online. TaoBao has established various role models of entrepreneurial sellers who have jointly constituted to more than 1.4% of China’s total retail trade (Alibaba, 2009). The success of starting up businesses online as entrepreneurial sellers has led to inspiring stories in Chinese newspapers, motivating other potential sellers to join the online business. TaoBao provides a common marketplace to facilitate the opportunity for individuals to implement and realize their goals of becoming entrepreneurial sellers to achieve the above entrepreneurial motivations. Entrepreneurial sellers are recognized by friends, team members, peers and consumers via their successful online sales operation. Putting all these elements together, the perception of fit for the purpose occurs when the C2C marketplaces aid individuals to achieve their goals of becoming entrepreneurial sellers. We thus propose:

\[ H1: \text{An entrepreneurial seller's evaluation of task-technology fit is affected by his/her entrepreneurial tasks.} \]

**Technological Characteristics and Task-Technology Fit**

C2C online marketplaces, such as TaoBao, connect sellers and buyers in the marketplace to facilitate the exchange of goods and services. For an online marketplace, it is important to provide users with a secure, credible, and efficient transaction marketplace (Zhou and Lu 2008). In order to aid individual sellers to carry out online transactions, a C2C online marketplace can be designed with technological functionalities that cover information exchange, transactions, customization, and back-end integration (Zhu 2004). Furthermore, Zhu (2004) summarizes that e-commerce capability is “a high-level, multidimensional construct generated from a set of specific variables measuring e-commerce functionalities”. This is also the case for C2C online marketplaces that provide e-commerce capabilities to entrepreneurial sellers.

In order to become online entrepreneurs, individual sellers need to provide information about their products and company. TaoBao offers each seller a structure to include product information, search information inside their shop, customer reviews, and feedback information. For transaction issues, TaoBao embeds a function for buyers to place orders online and update order status. In addition to facilitating transactions, one of TaoBao’s unique features is to offer various communication tools between buyers and sellers, allowing individual sellers to interact with their customers (Ou et al., 2008). From establishing a seller’s account, offering communication tools between buyers and sellers, providing personalized technical support, enabling data analysis of transaction, product and customer behavior, TaoBao provides sellers with various technological features tailored to the their needs. Furthermore, TaoBao offers software tools to synchronize the front-end product display and back-end product management, including product and logistics information. By including these four major functions, C2C online marketplaces can significantly facilitate the entrepreneurial sales tasks and online business operations, helping entrepreneurial sellers to achieve a fit with their motivations. The better designed these four technological functions are, the more likely the fit perception will be. We argue that C2C online marketplaces designed with better IT functionalities in the technological characteristics covering information, transactions, customization, and back-end integrate contribute to the sellers sense of fit between their entrepreneurial tasks and the marketplace’s technological characteristics. We thus propose:
H2: An entrepreneurial seller’s evaluation of task-technology fit is affected by the C2C online marketplace’s technological characteristics.

**Linking Task-Technology Fit with Entrepreneurial Seller Success**

The “technology-to-performance chain” is the overarching framework in TTF (Goodhue and Thompson 1995), in which technology utilization depends on the fit between the technology and the tasks it supports. Specifically, Goodhue and Thompson (1995, 2003) suggest that TTF not only increases the likelihood of utilization, but it also enhances the performance impact of the system regardless of its purpose. When the system meets the requirements of individuals, it exerts a positive influence on performance by helping them complete their required tasks (Staples and Seddon 2004). Likewise, a poor task-technology fit can result in poor performance (Vessey 1991).

We argue this is also the same case for utilizing online C2C marketplaces for individual sellers where TTF influences three interwoven success outcome variables, viz., satisfaction, utilization of the marketplace, and sales performance. Clearly, utilization may be related to how well sellers feel the online marketplace fits their entrepreneurial tasks. If sellers consider the online marketplace not to be appropriately designed to carry out their selling tasks, such a perception would constitute a negative influence on satisfaction, and subsequently impede the utilization of the marketplace and sales performance. If the marketplace is perceived as more useful in helping entrepreneurial sellers to carry out their tasks, it is very likely that the sellers would feel satisfied with the marketplace. Then they would use the marketplace more, subsequently leading to better sales performance. Following the above arguments, we propose that:

H3a: Task-technology fit is positively associated with a seller’s satisfaction of a C2C online marketplace.

H3b: Task-technology fit is positively associated with a seller’s utilization of a C2C online marketplace.

H3c: Task-technology fit is positively associated with a seller’s sales performance in a C2C online marketplace.

**Three Interwoven Success Outcome Variables**

In addition to the utilization level, user satisfaction is also an important means to measure the success of utilizing a system (DeLone and McLean 2003). For IT impacts to occur, users must utilize the system as the precursor (Goodhue and Thompson 1995; DeLone and McLean 1992). It is obvious that the more satisfied with a C2C marketplace the sellers are and the bigger the benefits they perceive, the more likely it is that they will utilize the marketplace to promote and continue their sales business. An online seller’s actual experience of utilizing the C2C marketplace may lead him/her to conclude that the marketplace has a better (or worse) impact on his/her sales performance than anticipated. For integrality purposes, we thus include the interwoven relationships between three success outcome variables in the research model:

H4a: Satisfaction with a C2C online marketplace is positively associated with the focal seller’s utilization of the C2C online marketplace.

H4b: Utilization of a C2C online marketplace is positively associated with the focal seller’s sales performance in the C2C online marketplace.

**Methodology**

TaoBao was chosen as the research context because of its leading position in the online marketplaces in China. For this pilot study, we randomly selected sellers from 40 major product categories. Each TaoBao seller’s website shows his/her IM contacts (i.e. in QQ, WangWang and MSN). We used these contacts to invite 570 sellers to participate in an online survey in early 2011. The participants were asked to indicate the scales of the entrepreneurial tasks, their evaluation of the technological characteristics of TaoBao, the task-technology fit, utilization, sales performance and the overall satisfaction level. 128 valid responses were received in one month, yielding a response rate of 22.5%. Table 1 summarizes the demographic data.
Building upon the literature on entrepreneurial motivation (Carter et al. 2003), we measure entrepreneurial tasks as a second-order reflective measure, covering financial security, independence, innovation, recognition, roles and self-realization. Likewise, based upon Zhu (2004), we measure technological characteristics as a second-order reflective measure, covering information, transaction, customization, and back-end integration. Task-technology fit was adapted from Jarupathirun and Zahedi (2007) and Lin and Huang (2008). Marketplace utilization is adapted from Thompson et al. (1991). Measures of satisfaction and sales performance are adapted from the measurement scales from Jarupathirun and Zahedi (2007) and Wang et al. (2010), respectively.

**Data Analysis**

We used Statistical Package for the Social Sciences (SPSS) and Partial Least Squares (PLS) for validating our measures and testing the structural model. Convergent and discriminant validity are confirmed by exploratory factor analysis of the first-order constructs. After dropping three items, all factor loadings scores are above 0.7, higher than the cutoff point of 0.4 and cross loading scores. Composite alphas of all constructs are above 0.85 (Table 2) and most communalities are above 0.60 (details from the authors).

<table>
<thead>
<tr>
<th>Principal Constructs</th>
<th>Composite alphas</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>1. Entrepreneurial Tasks</td>
<td>0.85</td>
<td>0.70</td>
<td></td>
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<td>2. Technological Characteristics</td>
<td>0.93</td>
<td>0.56</td>
<td>0.68</td>
<td>0.83</td>
<td></td>
<td></td>
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<td>3. Task-Technology Fit</td>
<td>0.95</td>
<td>0.60</td>
<td>0.88</td>
<td></td>
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<tr>
<td>4. Satisfaction</td>
<td>0.88</td>
<td>0.39</td>
<td>0.62</td>
<td>0.35</td>
<td>0.87</td>
<td></td>
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<tr>
<td>5. Utilization</td>
<td>0.87</td>
<td>0.16</td>
<td>0.35</td>
<td>0.63</td>
<td>0.41</td>
<td>0.88</td>
<td></td>
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<tr>
<td>6. Sales Performance</td>
<td>0.90</td>
<td>0.03</td>
<td>0.66</td>
<td>0.13</td>
<td>0.29</td>
<td>0.32</td>
<td>0.87</td>
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To estimate the second-factor models of entrepreneurial tasks and technological characteristics, we model the latent second-order constructs' reflective indicators using the procedure suggested by Zhu (2004). Then we run the whole research model with the second-order constructs with PLS. As shown in Table 2, the square roots of the square roots of the Average Variance Extracted (AVE) of all constructs are above 0.70, ensuring that the AVE for each construct is greater than the squared correlations between constructs. These results suggest sufficient good convergent and discriminant validity (Hair et al. 1998).

We also conducted tests for common method bias, following the methods recommended by Podsakoff et al. (2003). First, evidence for common method bias exists if one principal factor counts for the majority of the variance explained. The principal components factor analysis indicates that each principal factor.
explains reasonable variance (6.83%–19.92%), suggesting the lack of common method bias. Second, the correlation matrix (Table 2) shows that all correlations are below 0.70, while common method bias is evidenced by extremely high correlations (r>0.90) (Bagozzi et al. 1991). Finally, to test for multicollinearity, collinearity diagnostics for all constructs were also conducted. The analysis shows that the tolerance values and the variance inflation factors are all less than the acceptable cut-off points (Hair et al., 1998). These findings imply no severe multicollinearity problems.

As shown in Figure 2, all six entrepreneurial tasks and four technological characteristics show significant loadings to their own second-order construct, validating the second-order reflective model. All proposed hypotheses received data support from the pilot study, except H5. We speculate that this insignificant path coefficient is due to the indirect effect of TTF on sales performance via utilization. Such speculation appears reasonable because only actual usage of IT, instead of perception of fit, leads to the actual impact on performance. This result highlights the critical role of utilization in evaluating IT’s impacts on performance. The variances explained in TTF, satisfaction, utilization and sales performance are 50%, 40%, 18%, and 10%, respectively. In sum, the $R^2$ scores for all dependent variables and the high factor loadings yield an adequate goodness-of-fit for the overall research model (Chin 1998).

![Figure 2. PLS Results of Structural Model with Second-Order Reflective Measures](image)

Legend: Rectangles in single lines represent first-order factors measured with reflective scales. Rectangles in double lines represent second-order factors. Rounded rectangles represent first-order factors used as the reflective measures of the second-order factors. Significant path coefficients are presented in solid lines. Insignificant path coefficient is presented in a dotted line. (Note: n=128, *<0.05; ** p<0.01)

**Discussion, Implications, and Preparations for the Large Scale Study**

Although researchers have made significant efforts in examining the design of electronic marketplaces for online business, the linkage between the marketplace and entrepreneurship has historically been missing.
Also, most studies focused on online C2C marketplaces from the buyer’s perspective. In this pilot study, we have investigated entrepreneurship and how technology can nurture online entrepreneurship, topics that are relatively undeveloped and unexplored. As the leading online marketplace in China, TaoBao offers innovative features, embracing information, transactions, customization and back-end integration. Our initial results support our contention that these IT functionalities fit entrepreneurial tasks well.

To the best of our knowledge, this research is the first study emphasizing the design of C2C online marketplaces and entrepreneurship from the seller’s perspective. Research on the seller’s side of the online marketplace is scarce. This research filled in this gap by providing researchers with a starting point to conceptualize and investigate entrepreneurial tasks in online markets. The advancement of IT can benefit not only large-scale companies, but also small-sized online entrepreneurial sellers. By exploring and targeting the formation and maturity of entrepreneurship, IT can impart better and greater impacts. From this sense, we extended the TTF model into the context of online marketplaces by theorizing and tailoring the entrepreneurial tasks and the technological characteristics to online marketplaces.

Furthermore, this study contributes to the literature by broadening the concept of the TTF model with the empirical evidence to justify the model developed by Goodhue and Thompson (1995). In the context of different technologies, the impacts of TTF may vary under distinct circumstances. Entrepreneurial tasks, embodying utilization, sales performance, and satisfaction are facilitated by technology and user attitudes in our proposed framework. The evidence showed that TTF is a substantial predictor of satisfaction and utilization, but not sales performance. With the construct of utilization, it plays a predictive role of performance impacts, embracing sales performance. These empirical results verify and enhance our understanding of the outcomes of task-technology fit in a more inclusive manner.

Our study also suggests that young people aged 21 to 30 constitute the majority of online entrepreneurs in China, at least as evident in TaoBao. This finding is consistent with the information from the Public and Customer Relations Communication Department of TaoBao (Guangzhou Daily 2011) that 62% of the TaoBao sellers’ ages range from 18 to 32, indicating the current study did not suffer from age distribution bias in its sample. At the same time, this interesting phenomenon deserves attention. These young entrepreneurs do not resist new technologies. The design objective of C2C marketplaces can target innovative functionalities for these young entrepreneurs. With this in mind, marketplace providers can design the front-end and back-end marketplaces in a more informative, interactive and supportive way so as to enhance the technology fit with entrepreneurs. In this case, C2C marketplaces can attract many users as potential entrepreneurs. In an attempt to influence and enhance the fit, online C2C marketplaces, such as TaoBao, can constantly fine-tune IT functionalities for entrepreneurial sellers to better meet their entrepreneurial needs. The better a marketplace fits entrepreneurs’ needs, the more utilized it will be, and the more products that C2C marketplaces will be able to offer to buyers. An increasing number of buyers will attract more online entrepreneurs to the C2C marketplaces, forming a healthy and virtuous cycle.

This ‘research in progress’ paper opens up various research opportunities. For example, the survey questions, such as entrepreneurial tasks, can be fine-tuned. Including more factors of sales performance, such as the collaboration among entrepreneurial team members and corresponding marketplace design elements for collaboration, can enhance the variance explained on sales performance. Control variables such as entrepreneurial team size and product type can be included in the upcoming large scale study. Objective data such as the sales performance and sellers’ actual usage of specific marketplace functions can be used to avoid the potential common method bias and thus improve the rigor of the research as a whole. In order to enhance generalization, the research model should be tested with data not only one marketplace, but also from different marketplaces in those countries where online marketplaces are prevalent, such as Japan, the UK and the US.

This research has the potential to make a number of implications. First, this study conceptualizes the practically important phenomenon of online sales entrepreneurship where huge employment opportunities have been evidently created. Second, it highlights the seller’s perspective for designing effective online marketplaces, thus enriches the seller-side research and complement to the flourish buyer-side literature. Third, it opens up the world of C2C online marketplaces by investigating how specific IT functionalities contribute to the success of an online marketplace by drawing entrepreneurial sellers. Last but not least, it encourages future researchers to continuously identify new IT functionalities to nurture entrepreneurship, so that IS research can benefit society by examining IT-enabled entrepreneurship.
References


