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A Proposed Framework for Influencing Factors of Partnership in E-Marketplace

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Abstract

This paper attempts to integrate concepts of e-marketplace and inter-organizational relationship to build a framework for influencing factors of e-business partnership and empirically explore it. The importance for five dimensions of the Research Model based on four top representatives of interviewed Taiwanese companies engaged in e-marketplaces is summarized. Fuzzy Delphi Method is used to decide which factors are vital for the success in three phases of partnership in e-marketplace. Data are collected through a survey of organizations that are actively involved in the planning or operation of e-marketplaces. Except exploiting of new market, the result has been shown the influencing factors are not the same in three phases of partnership in e-marketplace. It implies that to manage an e-marketplace must have different strategies to select, develop, and maintain participants.

1. Introduction

In the past years, many organizations have tried to expand or broaden their supply chains in e-marketplaces. However, successful e-marketplaces are rare until now, it maybe partly dues to the Internet stock slump making financing much more difficult for e-marketplaces, but organization behavioral adjustments should be also considered. Transitioning from traditional transaction approaches to an e-business model and adopting new technology present many organizational challenges. Building an Internet infrastructure and attracting more participants initially may not ensure the longevity of an e-marketplace.

Therefore, this research tries to cover the findings of studies on e-marketplaces and organization behaviors. The research methodology is comprised of three approaches:

1. Literature review for building a Research Model.

2. Interviews with top-level executives in leading Taiwanese companies engaged in e-marketplaces to validate and justify the Research Model.
3. Questionnaire Survey based on the Research Model and Fuzzy Delphi Method to explore the critical influencing factors of e-business partnership.

Goal of this research is hence to present the Research Model for influencing factors of partnership in e-marketplace. These factors may create valuable information for e-marketplace administrators to build appropriate strategies for their businesses.

2. Literature Review

Within the literatures, it is shown that appropriation of information technology such as e-marketplaces justifies organization behaviors[5]. As to the relationship styles of business partners, scholars propose many types such as arm's length, joint venture, supply chain and so on[2,4,8,9,10,12,17].

Two major schools of thought have pursued the study of information technology and organizational changes. The decision-making school[14] emphasizes the cognitive processes associated with rational decision making and adopts a psychological approach to the study of technology and change. Institutional school[11,13] emphasizes the role of ongoing discourse in generating social constructions of technology, with a consequent emphasis on human interaction in studies of technology effects. Several theoretical views synthesize these competing schools to form the social technology perspective. Adaptive Structuration Theory (AST) proposed by DeSanctis and Poole[5] in 1994 provides a model that describes the interplay between Advanced Information Technology (AIT), social structures, and human interactions. AST focuses on social structures, rules and resources provided by technology and institutions as

the basis for human activities.

The constructs of AST[5] are (1) structure of AIT including structural features and spirit, (2) other source of structure including task and organization environment, (3) group's internal system including styles of interacting, knowledge and experience with structures, perceptions of others' knowledge and agreement on appropriation, (4) emergent sources of structure including AIT outputs, task outputs and organization environment outputs, (5) new social structures including rules and resources, (6) social interaction including two subsets: (a) appropriation of structures including appropriation moves, faithfulness of appropriation, instrumental uses, and persistent attitudes toward appropriation, and (b) decision processes including idea generation, participation, conflict management, influence behavior and task management, and (7) decision outcomes including efficiency, quality, consensus and commitment.

AIT brings social structures which enable and constrain interaction to the workplace. E-marketplace is one type of AIT for the modern organizational market; it combines computing, communication, and business trading decision support capabilities to aid in buyer-seller groups idea generation, planning, problem solving and choice making. Within the e-marketplace literatures, technology designs put computer systems to support business tasks, such as billing, inventory management, financial analysis, report preparation, coordination among people and provide procedures for accomplishing interpersonal exchange.

Structural features are the specific types of rules and resources, or capabilities offered by the system. Features within e-marketplaces might include anonymous recording of business transactions, periodic data collecting and analyzing, and negotiation within business groups. Those features govern exactly how information can be gathered, manipulated, and managed by members in e-marketplaces. Features of e-marketplaces bring meaning and control to group interaction. There currently is burgeoning interest in e-marketplaces and their potential role in facilitating organizational and social changes. Once e-marketplaces are applied, the technology should bring productivity, efficiency, and satisfaction to individuals and organizations, but the social evolution of structure within industrial and human institutions are also changing. Social technology perspective as AST can be an analytic principle to explore the influencing factors for e-marketplaces. Based on the meaning of each construct in AST, initial dimensions for the Research Model are listed as Table 1.

3. Research Model

Researches related to e-marketplaces focus on finding characteristics and functions. The findings in literatures

Table 1. Initial Research Dimensions inspired from AST

| Major Constructs of AST | Initial Dimensions for the Research |
|------------------------------|---|
| Structure of AIT | Characteristics of e-marketplaces |
| Other Source of Structure | Administration of e-marketplaces |
| Group's Internal System | Members of e-marketplaces |
| Emergent Source of Structure | Market Environment |
| New Social Structure | Derivative Problems of e-marketplaces |
| Appropriation of Structure | Functions of e-marketplaces |
| Decision Process | Phases of Partnership in e-marketplaces |

include information gathering, buyers-sellers matching, transaction efficient, supply chain integration, cost reduction, etc[1,3,7,15,16]. The influencing factors of each dimension are summarized in Table 2.

The relationship styles of buyers-sellers in organizational markets proposed as five relationship styles of partnership in e-marketplaces are also defined. They are (1) arm's length, (2) buyer-seller relationship, (3) trusted partnership, (4) joint venture and (5) value chain. Expert depth interview is employed to validate the Research Model. Then a primary questionnaire survey is conducted to analyze which influencing factors are vital for the success in three phases of partnership in e-marketplaces, including a question about the relationship styles of partnership in e-marketplace in order to exploit participants' perspectives.

Four top representatives of Taiwanese companies related to e-marketplaces are selected for expert depth interview to validate the Research Model. The companies interviewed are DRAMeXchange, Liet-On eCommerce, Universal Exchange, and Oracle Taiwan. The actors of these four companies in e-marketplaces are neutral, buyer-oriented, seller-oriented, and technology provider, respectively. The importance of each research dimension based on opinions of four executives of the interviewed companies is summarized in Table 3. The importance of five out of six research dimensions are bigger than 75% that is set to be significant (i.e. significant dimensions

Table 2. Influencing Factors of Research Dimension

| Research Dimension | Influencing Factors |
|---|--|
| Characteristics of e-marketplaces | (1)buyer-seller gathers (2)information gathering (3)information transparency (4)efficiency |
| Administration of e-marketplaces | (1)professional knowledge (2)credibility (3)capacity of information integration (4)providing of service integration (5)providing characters of commodity for transactions |
| Market Environment | (1)characters of industry (2)degree of computerization (3)promotion of pioneers |
| Derivative Problems of e-marketplaces | (1)reform of business procedures (2)reform of organization structure (3)degree of information transparency (4)security of online payment (5)standards of commodity |
| Functions of e-marketplaces | (1)styles of e-marketplaces (2)mechanism of matching (3)cost reduction (4)expansion of new channels (5)risk control (6)inventory control (7)integration of supply chain *(8)Information obtaining *(9)exploiting of new market |
| Phases of Partnership in e-marketplaces | (1)selecting of partners (2)developing of partnership (3)maintenance of partnership |

* proposed by four interviewed representatives.

Table 3. Importance of Research Dimension

| Research Dimension | Number of factors mentioned by experts | Sum of importance among factors | Importance of dimension |
|---|--|---------------------------------|-------------------------|
| Characteristics of e-marketplaces | 15 | 16 | 94% |
| Administration of e-marketplaces | 19 | 20 | 95% |
| Market Environment | 11 | 12 | 92% |
| Derivative Problems of e-marketplaces | 19 | 20 | 95% |
| Functions of e-marketplaces | 27 | 36 | 75% |
| Phases of Partnership in e-marketplaces | 6 | 12 | 50% |

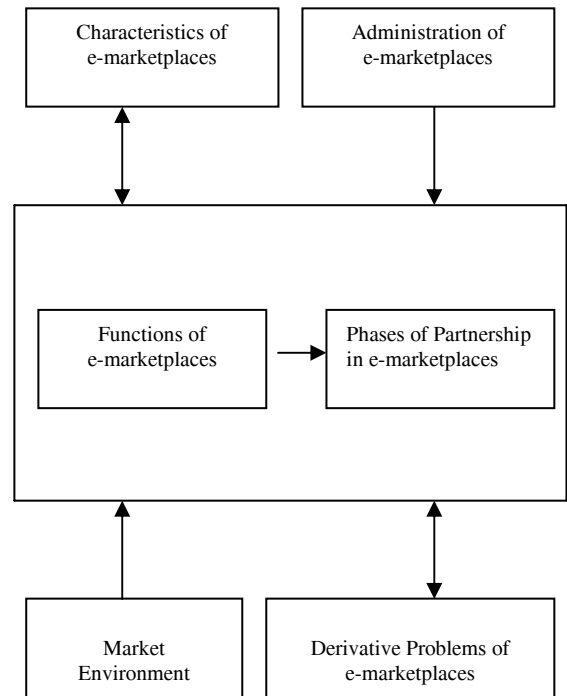


Figure 1. Research Model

must have three out of four interviewees mention at least). Based on the importance recommended by four executives, the Research Model is proposed as Figure 1. Information obtaining and exploiting of new market are two additional factors proposed by four interviewed representatives.

4. Primary Questionnaire Survey and Research Findings

Since the Research Model is justified and validated, the questionnaire survey is deployed next. In the questionnaire, fifty questions are developed for twenty-six influencing factors of five dimensions in the Research Model. Items appearing in the question are measured in five-point Likert-type scales. Data are collected through a survey of organizations that are actively involved in the planning or operation of e-marketplaces. Twenty-five questionnaires are delivered. Eighteen are recycled and considered effective after examination. For avoiding bias from extreme values, Fuzzy Delphi Method uses geometric means instead of average means to evaluate answer values of questionnaire surveys. This research is hence to use Fuzzy Delphi Method to decide which factors are vital for the success in three phases of partnership in e-marketplace.

The geometric mean of answer values to each question is converted into percentage form. Questions with the percentage bigger than 75% are considered significant in this research. Influencing factors related to those significant questions are the crucial factors this research aims to find. According to the primary analysis, the crucial influencing factors of three phases of partnership in e-marketplace are summarized in Table 4.

Table 4. Crucial Influencing Factors of Partnership in E-marketplace

| Phase | Selecting Of Partners | Developing of partnership | Maintenance of partnership |
|--------|--------------------------|---------------------------|----------------------------|
| Factor | Cost Reduction | Characters of industry | Expansion of new channels |
| | Credibility | Exploiting of new market | Exploiting of new market |
| | Information gathering | Efficiency | Credibility |
| | Information obtaining | Information gathering | Standards of commodity |
| | Exploiting Of new market | Buyer-seller gathers | Characters Of industry |

5. Conclusion

The research findings have been shown the influencing factors are not the same in three phases of partnership in e-marketplace, except exploiting of new market. These factors are dispersed in different dimensions (as shown in Figure 1). The research findings imply that to manage an e-marketplace must have different strategies to select, develop, and maintain participants.

As to the prospective relationship style of partnership in e-marketplaces, experts involved in the questionnaire survey regard e-marketplace transactions as the traditional ones. organizations involved in e-marketplaces only put their supply chains on Internet to make transactions more efficient.

Small sample size is one of the limitations of this research. A larger-scale questionnaire survey is expected to be conducted in the future to verify and enrich the primary research findings. Also factor analysis is going to be used for finding the vital research dimensions.

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