

Which B2B E-Business Model to Adopt: The Case of Taiwan Agribusiness Firms

Abstract

The research reported in this paper investigated the reasons which led Taiwanese agribusiness firms to adopt specific e-business models. Initially, the study was based on a prior study conducted in the context of Australian agribusiness firms. Its relevance lies in the importance of agribusiness to the economies of both nations and because whereas Australia has developed a reputation as an efficient exporter of agribusiness products, Taiwan needs to develop export markets for its agribusiness produce as it is facing increasing competitive pressure in such global markets, particularly with its entry into the WTO. Findings enhanced the preliminary model as two additional factors, the influence of buyers and suppliers and the influence of government agencies, were found to also influence the selection of e-business models.

Introduction

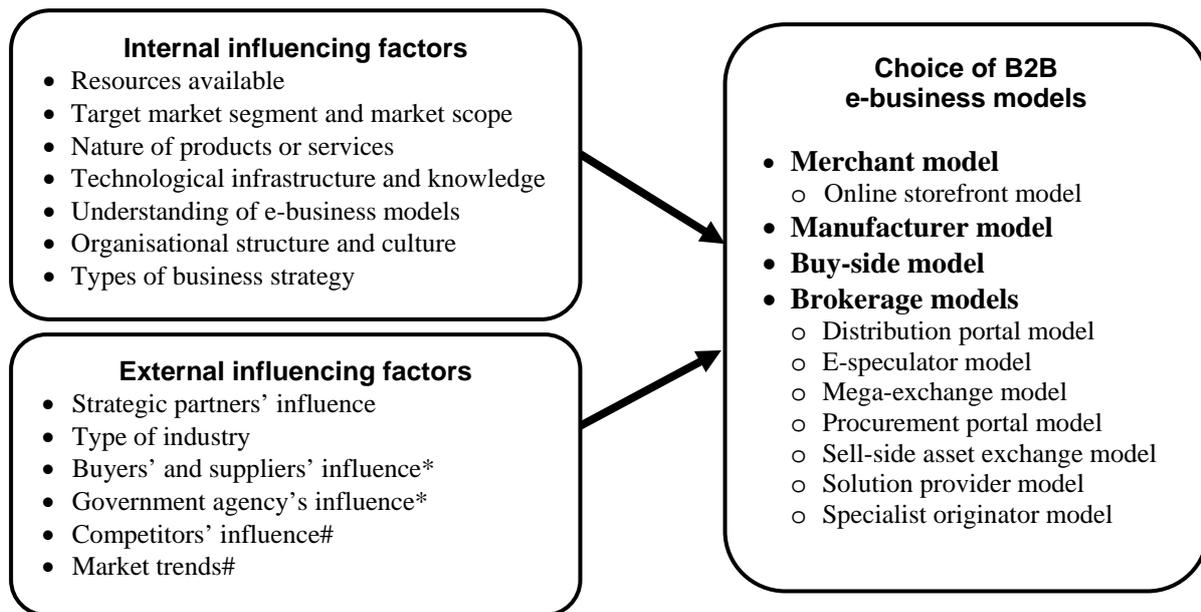
Effective e-business systems are regarded as keys to technological innovation (Damaskopoulos and Evgenious, 2003; Jackson and Harris, 2003) as they contribute benefits (such as reengineering, cost-cutting, provision of timely and accurate information for decision-making, strengthening of customer and supplier relationships, and establishment of new markets) (Hackbarth and Kettinger, 2000; Zhuang and Lederer, 2003) to firms in the increasingly complex global business environments (Veliyath and Fitzgerald, 2000). Growth in adoption of e-business is significant, particularly in the business-to-business sector and growth from under half a trillion dollars in the year 2000 to between \$3 and \$6 trillion by the year 2005 is projected (Totty, 2001). On the other hand, e-business requires existing business models to be reconfigured to reflect the transformations required to for this new environment (Barnes and Hunt, 2001). As contemporary organisations need to select from numerous types of e-business models with varying factors influencing their selection and as there is a general lack of empirical research to assist organisations in such decisions, this paper focuses on attempting to address the issue in a specific country and industry setting.

Agribusiness in Taiwan has been the traditional backbone of the country's economy, contributing some 40% of GDP in the early 1950s (China Business Site, 2005). Since then, there has been a rapid shift away from agribusiness towards services and manufacturing in recent years. As a result, in 2003 the agribusiness sector employed only 10% of the nation's workforce and contributed just 3.3% to GDP (Agri-Food Trade Service, 2003). Competition also intensified after Taiwan joined the WTO, a trading environment in which agribusiness faces increasing competitive pressure from large global companies. Despite continual support from government (due to its strategic importance in maintaining the economy and feeding the people in emergencies) (China Business Site, 2005), agribusinesses in Taiwan needs to strengthen its competences in order to react quickly to market changes. It is postulated in this paper that e-business models should be adopted in order to more effectively market products globally. Hence, this paper addresses the question: *'What factors influence the choice of B2B e-business models used by Taiwan agribusiness organisations?'*

Development of a preliminary model

A search of current literature about selection of B2B e-business models reveals that only limited studies such as that of Ng, Lawley and Summers (2003) are available despite its importance in technological innovation (Jackson and Harris, 2003) and the general need to re-think existing business models (Barnes and Hunt, 2001). Other relevant studies have investigated the following factors viz. (a) how organisations should make strategic decisions in general (Song, Calantone and Di Benedetto, 2002), (b) which factors are known to influence an organisation’s strategic decision making process (Eisenhardt and Martin, 2000), (c) the detail and development of e-business models (Rappa, 2001; Wise and Morrison, 2000) and (e) the classification system for the types of B2B e-business models (Rappa, 2001; Timmers, 1999). However, none of these appears to adequately address the many complex issues facing contemporary agribusiness organisations. The preliminary model in Figure 1 (below) which adopted in this study was derived from a previous study by Ng, Lawley and Summers (2003) which investigated agribusiness organisations in South-East Queensland in Australia which has long been regarded as having an efficient agribusiness sector which is dependent on exports because of a limited domestic market. Within this environment, 11 factors that were regarded as critical to the selection of B2B e-business models were identified.

Figure 1: Preliminary model for the selection of B2B e-business models



Adapted from: Ng, Lawley and Summers (2003)

Note: Based on the depth interview findings, factors with a (*) were added to the model as influencing factors to the selection of B2B e-business models.

Note: External influencing factors that have a (#) were regarded as less important to the choice of B2B e-business models.

This study identified seven internal influencing factors as important in the selection of B2B e-business models. *Resources availability* and *technological infrastructure and knowledge* were important in determining an organisation’s capability to develop and support the selected e-business model. *Target market segment and market scope* were also important since customers’ needs in different target market segments must be met with specific models

while it was also important that organisations select models that matched the *nature of the products or services* they offered. *Understanding of e-business models*, including the nature and benefits of the various e-business models was essential for organisations to determine the suitability of the model to be adopted. Finally, *the types of organisation and their business strategies* were important in setting the basis for the models to be adopted in order to achieve overall strategic goals.

On the other hand, there were four external influencing factors identified as essential to the selection of B2B e-business models. *Strategic partners* were regarded as important since these types of partnerships were formed to achieve common goals and therefore decisions were mutually influential. *The type of industry* was another important factor where organisations would tend to select models that were similar in nature to those used by others in the industry that they were operating in, and finally *market trends* and *competitors* were seen as essential influencing factors as they could indicate the models that were common and successful while maintaining competitiveness in the industry.

On the basis of this study, research was conducted to explore the practical and operational issues concerned with selecting B2B e-business models from the perspective of agribusiness organisations in Taiwan

Methodology

As this was an exploratory study the methodology consisted of two fundamental stages; depth interviews and case analysis. Eight interviews with e-business experts and industrial professionals investigated the appropriateness of those factors identified in the preliminary model, and also sought opinions and attitudes to better understand which factors influenced choice of e-business models. Additionally, organisational size was highlighted as another influencing factor in selecting e-business models. Case data was then used to assist in confirming or disconfirming the preliminary model as multiple sources of data can confirm the appropriateness of case study methodologies when building theory as in this research (Perry, 1998; Yin, 1994). Six agribusiness cases, all organisations currently involved in B2B e-commerce were selected judgementally, and two interviews from each with either owners or managing directors and middle level managers or operational personnel were conducted. These interviews were semi-structured and discussion was flexible and informal, thereby allowing the interviewer to gain insights about the research topic; the findings from this research are now addressed.

Research findings

The interview data not only confirmed all 11 factors identified in the preliminary model but revealed two additional factors (buyers' and suppliers' influence and government agency's influence), as possible influencing factors in selecting B2B e-business models. Additionally, potential differences within agribusinesses based on organisational size were also highlighted. These findings were then further investigated in stage two of this research in order to determine if different frameworks were needed for differing organisational sizes (large enterprises and SMEs).

The second stage findings supported all 11 factors developed in the preliminary model and the two additional factors highlighted in the depth interviews, as influencing the selection of e-business models by agribusiness firms in Taiwan. However, it should be noted that two (market trends and competitors' influence) of the 13 influencing factors were identified in this study as of being lesser importance to the selection of B2B e-business models. The identified factors are now discussed as either internal or external factors.

Internal factors

Seven (7) internal factors were seen as important in selecting e-business models. As all respondents agreed that since *resources availability* and *technological infrastructure and knowledge* were critically important to the selection of e-business models, then organisations should assess their resource levels (human, financial and physical) to determine their capability in developing, supporting and maintaining a selected model. From this assessment, organisations could select models catering to their circumstance. This was particularly evident in those SMEs with limited resources.

Target market segment and market scope were regarded as essential to organisations when selecting e-business models, since different market characteristics and features could influence selection of specific e-business models. As respondents revealed that it was important to select models that matched the *nature of the products or services* they offered. This was particularly evident in large enterprises offering multiple products or services to global markets which had diverse customers' needs and wants. This would indicate that large enterprises could result in adopting different e-business models for different market segments and products.

Respondents suggested that a good *understanding of e-business models*, including the nature and benefits of the various e-business models, could provide organisations with appropriate knowledge for determining the suitability of a particular model. Therefore, organisations in the decision stage should seek input and involvement from people with the requisite knowledge to improve their chance of success.

Finally, the *types of business strategy* and *organisational structure and culture* were regarded as key drivers in formulating strategic goals, which greatly impacted on the choice of models to be adopted to conduct businesses in the electronic environment. This was particularly important to many agribusinesses in Taiwan since they had strong emphasis on culture that traditionally formed the basis and foundation on how businesses were to be conducted, not to mention the choice of models to be adopted.

External factors

Four of the six external factors were identified as important to the selection of e-business models. Respondents stressed the importance of *strategic partners', buyers' and suppliers'* influence on e-business model choice as many of these business relationships were formed and developed on the basis of achieving common goals and mutual interests. These factors were particularly critical in conducting businesses in Taiwan because relationship (*guanxi*) was deemed to be very important and could potentially influence favourable outcomes. Another important factor was the *industry type* where organisations tended to select models similar in nature to their industry segment. For example, agribusinesses that offered commodity like products (no product differentiation) found the sell-side asset exchange

model suitable as this model enabled the swapping and reselling of orders amongst suppliers and demonstrated the importance of relationships between business associates within the agribusiness industry.

Agribusinesses sought advice and support from the relevant *government agencies* on the types of models to be selected. This reliance on a government agency greatly influenced the choice of model for adoption, particularly when the agribusiness industry in Taiwan was in the early stage of e-business adoption. This suggested that the government should work closely with agribusinesses and helped smooth the transit to the e-business environment.

Differences within agribusinesses

There were differences in responses for five of the 13 factors based on organisational size and management perspective. Respondents from large enterprises regarded types of business strategy and organisational structure and culture as two important influencing factors, not only in their choice of models but also in making strategic decisions. In fact, the business strategy adopted would determine how e-business activities were to be conducted. Whilst, the strong organisational culture grounded in the many Taiwanese agribusinesses could influence the decision on the types of e-business models adopted. In contrast, respondents from SMEs were more concerned with two other factors; buyers' and suppliers' influence and government agency's influence. This suggested that SMEs maintained close working relationships with their buyers and suppliers, and sought assistance from the government to provide appropriate advices, in order to enhance their competitiveness in the electronic business environment within the industry.

From the management perspective, respondents believed that strategic partners' influence could not be disregard since decisions made by either one party might have an impact on the other. This was particularly evident in management roles where they had to consider partners' positions and view things strategically. Whilst, operational personnel indicated that they had only few opportunities to be involved in their respective organisations' strategic planning process and meeting with these partners, therefore this factor had no significant influence on them.

Conclusions and implications

The research reported in this paper consisted of two stages, firstly a replication of a prior Australian study in another country setting (Taiwan) into the adoption process used by agribusiness firms when they select e-business models for their organisations and secondly a series of depth interviews with key informants in e-business and agribusiness professionals in Taiwan. Analysis of the interview data revealed that two additional factors, namely the influence of buyers and suppliers on the one hand, and the influence of government agencies were important in Taiwan and as a result, the model has now been expanded to include these two additional factors and therefore adds to understanding about the selection of e-business models for agribusiness firms in competitive market settings. The model (Figure 1) highlighted the relative importance of those influencing factors and helps to provide a framework to agribusinesses to assist them in making decisions about selection of the most appropriate e-business models. From this framework, managers are able to consider and evaluate the relevance of these factors and determine the essential ones that require consideration during their selection processes.

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