

# The Success of E-Collaborative in E-Commerce: The Study of B2C Business in Thailand

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**Abstract**—The objectives of this research were to study the influencing factors that contributed to the success of e-collaborative in e-commerce of B2C (Business to Customer) business in Bangkok, Thailand. The influencing factors included organization, people, information technology and the process of e-collaborative. A questionnaire was used to collect data from 200 small e-commerce businesses and the path analysis was utilized as the tool for data analysis.

By using the path analysis, it was revealed that the factors concerning with organization, people and information technology played an influence on e-collaborative process and the success of e-collaborative, whereas the process of e-collaborative factor manipulated its success. The findings suggested that B2C e-commerce business in Thailand should opt in improvement approach in terms of managerial structure, leaderships, staff's skills and knowledge, and investment of information technology in order to capacitate higher efficiency of e-collaborative process that would result in profit and competitive advantage.

**Keywords**—E-collaborative, E-commerce, B2C.

## I. INTRODUCTION

THE growth of fast Internet has provided a new channel of trading and the era of e-commerce changed the global business and economic view. As consequences, the way of doing business has become more automatic and effective in exchanging information for interactions between suppliers and customers. One of the most important strategies is the use of information technology and communications to place in a tool to increase the overall efficiency of the organization. This strategy concurs with the Thai public policy which encourages Thai business to use Internet and related technologies to enhance their level of competition.

Thailand's e-commerce market has been growing steadily over the past few years [1]. Internet has become the essential role of business operation paradigm related to the development of platform for trading, distributing and selling products through e-commerce system. The development of the commercial trade through the Internet has surprisingly changed the retail businesses also known as Business-to-Customer or B2C. Therefore, the way of doing business has become more automatic, effective; and thereby increasing the opportunities for small and medium enterprises to compete in the global trade directly.

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The use of the Internet and related information technologies has created opportunities to increase business collaboration [2]. Collaboration is simply described as individuals working together for sharing information. While e-collaboration is the use of internet and related technologies to assist distant clients in exchanging information for interactions between suppliers and customers in order to achieve individual goal [3]. There are several e-collaborative technologies available today that allow organizations to have instant communication within a business, between businesses or between businesses and consumers.

With globalization in business, e-collaboration has become the essential roles for organizations to successfully compete in the marketplace in terms of optimizing productivity, quality, and ultimately profitability. Implementing e-collaboration in business with internal process has many benefits, ranging from driving knowledge continuity to increase productivity, improving performance, and facilitating corporate strategies and decision making [4]. E-collaboration allows the customers to take an active role in all aspects of sales and customer marketing experiences from setting their own shopping and products for fulfillment and feedback [5]. Suppliers also gain advantage to reduce costs, automated processes, reduce process in inventory and associated carrying costs, increase potential opportunities in the partnership, flexibility and adaptability [6].

Aimed to building profitable and sustainable growing with e-commerce, collaborative management is part of company's activities and service production to customers, which are applied in several organizations. This research paper concerned a success of e-collaborative management of B2C business in Thailand. The findings of this paper will help to understand the influences of factors that contribute many facets of e-collaborative success in B2C businesses.

The purposes of this research paper were to investigate the use of e-collaboration in small B2C business and the influencing factors that contributed to the success of e-collaborative included, organization, people, information technology and the process of e-collaborative. The results would be useful in creating a new body of knowledge of the relationship of factors affecting success of e-collaboration for B2C business in Thailand, which could be applied in laying out strategic policy planning and business performance monitoring in the part of e-commerce management of organizations.

## II. THE CONCEPTUAL FRAMEWORK AND HYPOTHESES

The developed research conceptual framework draws on various theoretical perspectives derived primarily from the synthesis of the integrated literature. The study variables in this conceptual framework could be explained as follows:

First, organization factor was related with organization structure, strategy and collaborative system planning [6]. Moreover, necessary organization culture should be constructed for staff in order to capacitate collaboration duties [7]. The organization needed appropriate strategies in order to implement the collaborative activities as planned.

Second, people factor was related with collaborative-oriented behavior of staff, staff's satisfaction and attitude towards management [7]. Many previous researches focused on the willingness of the top level management to provide vision, strategies, commitment and sufficient recourses needed to the implement process [8].

Third, information technology is useful for the exchange and sharing of information. Advancement of information technology to be adopted in collaborative implementing should meet with effectiveness in term of hardware, software and network to core business process of exchanging information between concerned departments and customer's and supplier's information sharing. The successfully e-collaboration depended on technology readiness and technology integration. Technology readiness examines whether the organization has the necessary technology infrastructure and IT human resources. While technology integration was defined as compatibility of systems integrated as the degree of inter-connectivity between the organizations' back-end information system and externally integrated with the partners' enterprise systems and databases [9].

Fourth, e-collaborative process which included the system of enterprise resource planning (ERP), customer relationship management (CRM) and supply chain management (SCM) [6], [10]. The use of e-collaboration enabled businesses to redefine and improve their trading partner relationships with both customers and suppliers. As businesses build e-collaboration processes with their customers, they are able to redefine and build more intimate customer relationships with their trading partners. E-collaborative processes also jointly developed products or demand forecasts and production plans with suppliers.

Fifth, success of e-collaborative can be measured by using financial and non-financial performance measurements. Financial measures are expressed in monetary units such as costs, sale volumes, revenues and profits. While non-financial indicators are used to measure performance for the reliable prediction of the long-term performance such as supplier and customer satisfaction and retention of service that indicate willingness of customers or suppliers to continue and even establish their relationship with the organization more firmly. The non-financial performance measures were leading indicators that provided information influencing the firm's long-term financial performance [11].

The developed research conceptual framework for this study is shown in Fig. 1.

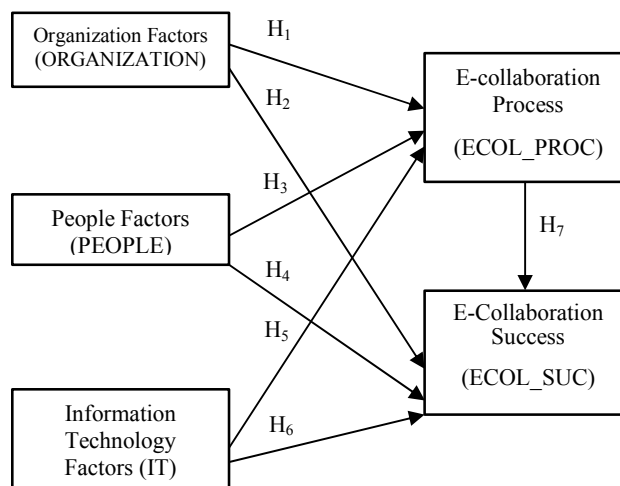


Fig. 1 The Conceptual Framework of Research

According to the reviewing of study variables and the conceptual framework of research, the following hypotheses are proposed:

- H1. Organization had a positive direct effect on e-collaborative process.
- H2. Organization had a positive direct effect on the success of e-collaborative.
- H3. People had a positive direct effect on the e-collaborative process.
- H4. People had a positive direct effect on the success of e-collaborative.
- H5. Information technology had a positive direct effect on the e-collaborative process.
- H6. Information technology had a positive direct effect on the success of e-collaborative.
- H7. The e-collaborative process had a positive direct effect on the success of e-collaborative.

## III. RESEARCH METHODOLOGY

This research aimed to investigate relationship among the potential factors that facilitate the success of e-collaborative. It employed a multi-methodology which included quantitative and qualitative methods. Content validity analysis was conducted before piloting in order to test validity and reliability of the questionnaire by use of IOC and Cronbach's alpha respectively. The population of this study was Thai small B2C businesses located in Bangkok, Thailand. The study units included business management involved in operating e-collaboration which was the management team, heads and staffs. Cluster Random Sampling was used in order to classify type of business in different clusters based on different products and Simple Random Sampling was then utilized, resulting in receiving responses from 200 samples. Descriptive statistics was used in order to demonstrate the demographic profile and factors, while the path analysis was used as the inferential statistics in testing the hypothesis. For the qualitative data analysis, content analysis was employed with the studied factors and hypothesis, and the criteria of selection in order to elicit important content from the respondents.

#### IV. RESULTS

The findings can be summarized as followed.

##### A. Respondent Demographics

The demographic background of the respondents in this study was different types of the selected B2C business in e-commerce, which applied e-collaborative functions into their performance. The majority of the 200 respondents had an average of 3.14 years of operating in e-commerce business. The average number of employees for each organization was 3.63 persons. The products and services were tangible products. The characteristic of business was a website business and with no store location. Business orders were done online and payment was offline. Shipment of product was offline. The business had developed the system of e-commerce with system development by its own staff.

##### B. Descriptive Analysis of Variables

The results of the study to investigate the factors that influenced the success of e-collaboration in e-commerce for small B2C business by using 5 levels of Likert scale. Internal consistency was measured by applying the Cronbach's alpha test to the individual scales. As all of the items had an alpha above the standard guideline of 0.70 with the value 0.86, 0.89, 0.82, 0.88 and 0.72 respectively. Therefore the scales can be used for analysis with acceptable reliability. The overall measures were reported in Table I.

TABLE I  
SUMMARY OF DESCRIPTIVE ANALYSIS AND CRONBACH'S ALPHA TEST

Variables	Mean	S.D.	Cronbach's Alpha
Organization	3.83	0.64	0.86
People	3.92	0.60	0.89
Information technology	3.75	0.71	0.82
E-collaborative process	3.74	0.61	0.88
E-collaborative success	3.78	0.72	0.72

The findings of variable condition analysis included organization, people, information technology, e-collaborative process and success of e-collaboration. The findings revealed that the respondents rated all variables as high important, among which people variable was the highest important with a mean score of 3.92. The second variables were organization, information technology and e-collaboration process, which received a mean score of 3.83, 3.75 and 3.74 respectively. Analyzing the condition of information technology success brought about the finding that the respondents rated the variable as high important with a mean score of 3.78. The mean and standard deviation of the variables were demonstrated in Table I.

The finding analysis reported that the respondents rated people variable as the highest important, followed by organization variable, information technology variable, e-collaboration process and e-collaboration success variable. This finding concurred with qualitative studies that revealed that management people in most B2C business placed an importance on the people variable. However, it was found that most e-commerce business placed lower level of importance on information technology than on people and organization variables, which corresponded with the finding of the

interviews conducted in this study. The finding unveiled that effective e-collaborative system needed high investment on information technology. Most businesses reported that there still was low investment on information technology and implementing e-collaboration was just dependent on high investment of information technology and on staff participation in assimilating e-collaboration into their works.

##### C. Path Analysis Result

Path analysis was conducted to test the relationship between the whole set of predictors and dependent variable. After assessing the reliability and validity of measurement model, we tested the hypothesis and overall fit of the path model by using the maximum likelihood (ML) technique to estimate the parameters. The result of the estimation of all parameters of the adjusted model was presented by Fig. 2.

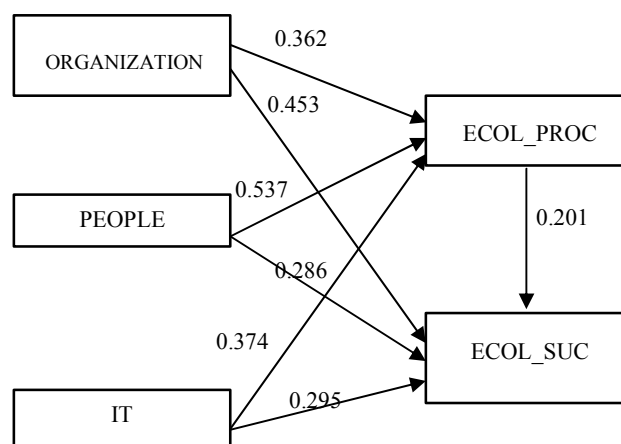


Fig. 2 The Results of Path Analysis

##### D. Hypothesis Testing Results

The adjusted hypothesized model had shown a relationship between the variable of organization, people and information technology, and the e-collaborative process affecting the success of e-collaboration. Seven hypotheses were established to test a relationship between the studies variables. The finding revealed that the variables of the conceptual framework accepted the hypothesis by considering of regression coefficient, t- value and direction of a relationship between the variables. The hypothesis testing results were presented in Table II.

Table II showed that mostly the estimation of parameters and direct effects of the influencing variables in the adjusted model was accepted with the established hypothesis as follows:

TABLE II  
HYPOTHESIS TESTING STATISTICS AND RESULTS

Direction	$\beta$	t value	Result of Hypothesis
ORGANIZE $\rightarrow$ ECOL_PROC	+0.362	3.376**	Support
PEOPLE $\rightarrow$ ECOL_PROC	+0.537	10.433**	Support
IT $\rightarrow$ ECOL_PROC	+0.374	4.092**	Support
ORGANIZE $\rightarrow$ ECOL_SUC	+0.453	5.406**	Support
PEOPLE $\rightarrow$ ECOL_SUC	+0.286	2.135*	Support
IT $\rightarrow$ ECOL_SUC	+0.295	2.514*	Support
ECOL_PROC $\rightarrow$ ECOL_SUC	+0.201	1.974*	Support

\*Significant at  $\alpha = 0.05$ , \*\*Significant at  $\alpha = 0.01$

H1. Organization had a positive direct effect on e-collaborative process.

H2. Organization had a positive direct effect on the success of e-collaboration.

The hypothesis testing revealed that organizational structure, strategies and organization culture affected directly the e-collaborative process ( $\beta=+0.362$ ,  $t$  value=3.376), coincided with the hypothesis, and they affected directly the success of e-collaborative ( $\beta=+0.453$ ,  $t$  value = 5.406), coincided with the hypothesis.

The result revealed that implementation of e-collaborative system as the organization strategies and effective system towards the strategic goal of e-collaboration has a positive effect on organization performance, particularly in financial and non-financial success with new customers and retaining existing customers, which results in gaining competitiveness. E-collaborative motivates an improvement of customer satisfaction and loyalty, while reducing financial cost in operation within business process and external process with suppliers to generate revenue and ensure competitive advantage [11]. Moreover, organization culture and internal communication for changing staff's attitude and promoting them to embrace e-collaborative concept in their work are the most challenging tasks of the management. This fact corresponded with the interview findings revealing that the majority of the management people agreed that in order to apply the e-collaborative effectively and successfully within an organization, the organization required changes and adjustment of working process and organizational structure to incorporate with the e-collaborative objectives.

H3. People had a positive direct effect on the e-collaborative process.

H4. People had a positive direct effect on the success of E-collaborative.

People with leadership and collaborative-oriented behavior had a direct effect on the e-collaborative process ( $\beta=+0.537$ ,  $t$  value = 10.433), resulting the  $H_3$  being accepted, and this had a direct effect on the success of E-collaborative ( $\beta=+0.286$ ,  $t$  value = 2.135), resulting the  $H_4$  being accepted. However, people had no indirect effect on the success of E-collaborative.

This fact corresponded with the interviews with the management people, many of them pointed out that the success of their B2C business in regards to collaborative started from the leaders' vision and strong will in providing service of the staff before an implementation of information technology.

H5. Information technology had a positive direct effect on the e-collaborative process.

H6. Information technology had a positive direct effect on the success of e-collaborative.

Information technology which consisted of information technology infrastructure and quality of information system had a direct effect on the e-collaborative process ( $\beta=+0.374$ ,  $t$  value = 4.092), coincided with the hypothesis, and they affected directly the success of e-collaboration ( $\beta=+0.295$ ,  $t$  value=2.514), coincided with the hypothesis.

The effective e-collaborative in business still requires high investment on information technology. Extranets are the technical community to generate communication between partners and corporate members by using Internet technology to serve the needs of an organization. A company web site was used to link two or more trading partners (B2B) and system designers at each participating company must collaborate to ensure a common operation interface. Most business agreed that they had invested small budget on information technology, and that implementing e-collaborative was just dependent on investment of information technology or on staff responsible on information technology and their participation in assimilating e-collaborative into their works.

H7. The e-collaborative process had a positive direct effect on the success of e-collaborative.

The e-collaborative process which consisted of acquisition, retention and expansion of customers' relationship had a direct effect on the success of e-collaborative ( $\beta=+0.201$ ,  $t$  value = 1.974), coincided with the hypothesis.

The analysis of the condition of e-collaborative process and the success of e-collaborative revealed that expansion of e-collaborative is a way to increasing profit, supplier and customer satisfaction through providing service with fast and accurate response and keeping their needs as very important matter. Most management people agreed that small and medium business must face with severe competition. Therefore, there is a need to enhance the effectiveness of all aspects of the organization to be able to compete with both domestic and international competitors. One of the most important strategies is to implement information technology and communication to be tool in to increase the overall effectiveness of the organization. Applying e-collaborative in business brings universal access to Internet to core business process of exchanging information between businesses, between people within a business and between a business and its many clients. The success of implementing e-collaborative in business enables companies to accomplish both financial and non-financial goals. In the perspective of financial success, business could reduce the cost; generate revenue and profit to achieve market leadership and competitive advantage. In the perspective of non-financial success, the success was to build customer relationship and loyalty and enrich human capital by improving their knowledge and skill transfer.

## V. RECOMMENDATIONS

Implication of this research suggested future practicality as follows.

First, development and improvement of working environment of the B2C business should be done as well as adjusting organizational structure and strategies with suitable and sufficient information technology to implement the effective e-collaborative in e-commerce. Furthermore, the organizations should build a collaborative oriented driven culture among the staff or creating an environment that provides a customer centricity value.

Second, the management team of each business should perform their leadership that can lead the staff based on the

leaders' vision. The staff should be able to recognize and learn about the vision of implementing e-collaboration into daily operation and to be comfortable and facilitated in inquiring cooperation across the departments or divisions. Additionally, knowledge management should be adopted within the business in order to develop skills and knowledge of staff in operating their duties and enrich human capital by direct knowledge transfer.

Finally, the business may consider investing on information technology infrastructure in hardware, software and network system, as well as staff. Moreover, the process of e-collaborative should be appropriately integrated with the invested information technology in order to drive the management of e-collaborative activities operated smoothly and effectively.

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