

# Determining Effective Elements on Participation in a B2B E-commerce System by Considering Time and Cost

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**Abstract**—In recent decades, most of the businesses were started using electronic commerce. Today, B2B is the most popular model of electronic commerce. One of the issues in B2B systems is Participation. Participation means taking apart or gets involving for doing some tasks in a development process. However there are many studies on collaboration and communication in a B2B system, lack of study in participation is observed. A qualitative method based on interview, in a case study, was used for data collection. As a result, effective elements including centralized database, communication, accessibility, paperless work cycle and collaboration in a B2B system, can improve the participation significantly.

**Index Terms**—E-commerce, B2B, participation, time, cost.

## I. INTRODUCTION

In recent days Internet affects all aspects of life and business. Once the Internet was invented, E-business and E-commerce were introduced. E-commerce means providing service and making money under the networks such as the Internet which is the most famous among the people and business. One of the e-commerce models is B2B (Business to Business). Using B2B for improving the relationship between organizations and pure transactional activities will develop into corporate collaboration gradually. All the B2B systems have many features such as technology medium, connectivity type and etc. one of the issues that can make efficient connection between businesses is participation. Some elements are effective on participation. In this paper, these elements were extracted and described.

## II. LITERATURE REVIEW

### A. What is Participation?

Participation inside a company indicates combined consultation in making decisions, setting goals, benefit sharing, teamwork, and other such measures through which a company tries to promote or improve its employees' commitment to collective aims. Participation is defined as an productive approach by which beneficiary client influence the direction and performance of a

development project with a view to improve their well-being in terms of profits, personal growth, self-reliance or other values they cherish [1].

Participation, in the development context, is a process through which all members of a community or organization are involved in and have influence on decisions related to development activities that will affect them [2]. That implies that development projects will address those community or group needs on which members have chosen to focus, and that all phases of the development process will be characterized by active involvement of community or organization members.

### B. B2B Characteristics

Depending on what aspect is concentrating on, B2B can be explained in different ways. Here we discusses different attitude by which B2B transactions can be distinguished [3].

Many mechanisms potentially exist within a marketplace for B2B sales and purchases, but all involve up to three participant types: buyers, suppliers and intermediaries.

A direct connection can be occurs between a buyer and a seller or it can be conducted with hand of an online intermediary [4]. An online third party that brokers the transactions among buyers and sellers considered as intermediary [5]. Intermediary can be either a click-and-mortar or virtual.

Spot buying and strategic sourcing are two basic types of B2B transactions. Spot buying is buying of requiring products and services, commonly at current market prices [6] and [7]. Supply and demand determine prevailing prices dynamically [8]. The sellers and the buyers may have not any information about each other. Giving and taking the stocks and goods exchanges are examples for spot buying. In strategic sourcing purchasing process occurs in a long- term deal and private negotiation between parties to contract [9].

In B2B model two kinds of materials and supplies are deal include direct and indirect. Products components such as wood to produce a bed, is indirect materials [10].

Collaboration has been positioned as being at the heart of improving supply chain performance. Collaboration is proposed to be more effective and more difficult than cooperation, which, in a supply chain sometimes seems impossible to achieve [11]. "Ref. [12]" defined that a pre-

requisite for B2B collaborations, are information about collaborating organizations and their products and/or services. These can be translated into partner organizational information and product information [13].

To adapt to changes quickly especially in the trend towards adaptive supply chains, efficient and effective B2B interactions and communication capabilities are important for companies [14].

### III. DATA COLLECTION

Bendahari UTM was chosen as a case study. Questions were considered in a special category which was able to take suitable data about participation. Questions were designed to collect data about e-commerce system and the features of systems that are related to participation and its effects.

### IV. EFFECTIVE ELEMENTS ON PARTICIPATION

There are five elements that can improve the participation in B2B systems. By reviewing the extracted data from case study, five effective elements in participation in B2B systems were found, these five elements are referred to centralizing databases for integration all data, communication between people, accessibility to data in whole of system, paperless systems to reduce physical communications and works and finally collaboration between businesses and also users of system.

#### A. Centralized Database

Centralizing database causes integrating information. This feature makes easy to use all the data for all staffs simultaneously. In addition this feature can improve participation because staffs and managers can use all the data in all units and they do not need to attend in all units. This feature also refers to improve interaction. So information in whole of company can distributed to all units for using.

#### B. Communication

This element refers communication between businesses in both side of B2B. Both sides should have communication with each other during a transaction of B2B. This element can effect on participation by reducing physical communication between suppliers and consumers. Communication in a B2B system covers many areas such as shipping, negotiation and etc. If businesses can communicate over the Internet with each other they can reduce physical connections and also they can communicate easier from all places to each other over the internet. So this element can effect so significant in participation because participation will be improved if communication facilities embedded in B2B system. This element plays an important role for improving participation.

#### C. Accessibility

Accessibility in a B2B system is an important feature that also has big effects on participation. Accessibility of system and data is a useful feature for organization staffs and also for other businesses that take apart in a trade

with organization. On the user's side accessibility can improve participation by making facility to access information, if company has units in different places. In addition if system provides over the internet all the users of system in all over the world can access data and participation can gain this element. Also business in other sides of trading can use data with an easy access over the internet, so they can participate in trades because off easy access to data easily.

#### D. Paperless Work Cycle

B2B systems have a big facility in connection between businesses that is removed paper using for making contract, filling forms and etc. When two company connecting to each other in a trading, they can make their documents without using papers, and also this facility enable them to participating in trading easier and save the time for sending the documents and also another problems that are facing with paper using systems. Trading partners can contribute with each other easier in paperless systems and also this feature can improve participation by removing physical attending for delivering papers and all the matters that referred to papers.

#### E. Collaboration

Units in an organization should contribute and collaborate with each other when they are as a side of a business trading. Collaboration is a feature of B2B systems that enable business partners to contribute with each other and also negotiate to do the efficient trading. B2B with facilitates collaboration makes trading efficient. In addition collaboration between business partners improving participation significantly, because trading partners can connect to each other easier and negotiating on business issues with each other without need to see each other in face to face meetings.

### V. ANALYZING EFFECTS OF PARTICIPATION ON SERVICE TIME

Participation is an element that can effect directly on time in B2B systems. This element can affect many parts and processes in an organization and one of these elements is service time. The most important points for service time in a B2B system is divided to two main points. First element in service time is fast response time that we can mean to on-time delivery of goods or services. And second service time feature is order cycle. This element is one of the most important for trading sides. Some participation elements can play a significant role to reduce time in B2B systems or B2B services.

In delivery time of goods or services in B2B systems, participation can help by some elements such as collaboration. Collaboration can optimize delivery time because organization units can cooperate with each other easier and making faster response to the other businesses requests. If all the units in a company have an efficient collaboration with each other, organization can proceed with the orders to next steps faster. In addition, collaboration is a facility in a B2B system for improving participation that has direct effect on response time. On

the other hand, centralized database can help business partners to reduce the delivery time because this feature is made information sharing between staffs of organization to see the necessary information and do related task about delivery.

Secondly, in order cycle time, also known as lead time, participation can effect. Some effective elements on participation can improve participation and effect by these elements on lead time. These effective elements can classify in communication, paperless system and accessibility.

At first communication between trading partners is a feature of B2B that improve participation. Improving participation by these elements caused removing some wasted time in order cycle because business partners can contribute with each other easier and it also can help business partners to know each other needs clearly and it can avoid confliction about the business partners needs in a trade. Secondly paperless system with effect on participation in B2B system can effect on time by removing physical attending in organizations. This feature enables business partners to participate in a trading without needs to physical papers and also they can make the order easier and faster. So the lead time or order time will decreased. Finally, accessibility is an important element to make efficient participating in trades for businesses and also it has most effects on time because all the business partners by accessing the information everywhere and every time can make order sooners and they do not need waste time to attending physically to get data from each other.

In Conclusion, some effective elements on participation has direct effecting on service types. By improving participation, as we see, lead time, response time and etc. can be decreased and business partners can make efficient trading by using effectively of these important elements.

## VI. ANALYZING EFFECTS OF PARTICIPATION ON COST

Cost is an important element that has direct effect on efficiency in business. B2B systems removed many costs to compare with previous physically trading systems but participation can help B2B to effect more on cost. So some of the effective elements on improving participation can reduce cost by improve participating of business partners. Some types of cost or elements on cost that can decrease with improving participation or some elements that has most effects on cost depend on participation improving. These costs are coordination costs, commitment cost and the most effective element that has a direct connection to participating effective elements is information sharing between business partners and also inter-company information sharing.

Coordination costs are those related to the need introduce business partners to each other, determine prices and etc. participation can effects on this cost by knowing sellers and buyers to each other. Accessibility improves participation between buyers and sellers by making access to data for them easier. By improving participation from the accessibility, the cost for knowing

each other for business trading both sides will be removed, because over the internet, they can access each other and also buyers and sellers can find their appropriate business partners or suppliers. This feature can remove the cost to find the appropriate buyers or sellers for both side of a business to business trading.

Secondly, information sharing is one of the issues on a business to business trading for most of companies. Information sharing needs more invests to be efficient. Participation can impress information sharing and also information sharing has a significant effect on cost. Information sharing can classify in two types that include information sharing between business partners and also inter-company information sharing. The first effective element on participation in a B2B system, that can reduce cost by information sharing, is collaboration. Collaboration can solve the information sharing inside an organization because by collaboration, units can contribute and share their information between each other. Another element that can connect to information sharing is communication. Communication can improve participation between business sides and also it can play as a solution for information sharing between buyers and sellers or suppliers. Finally centralized database is a key element for improving interaction and communication. This feature can reduce cost by improving participation. By this feature organization does not need to sustain physical attending for collecting information or exchanging information between different units.

Finally, the last issue on the cost is commitment cost. Commitment cost can be reduced, if organizations improve their participation. Facilitating companies by B2B can reduce commitment cost because sellers and buyers can connect to each other directly. Communication and accessibility in a B2B system have a significant improvement on Participating between buyers and sellers. Improving participating by these elements can also decrease commitment cost significantly. By communication, sellers and buyers can connect to each other easily and remove the commitment cost on a trading process. On the other hand accessibility also can remove commitment cost by improving participation because accessibility enables business sides in a trading process to find each other easily and directly without need to intermediary companies to pay commitment cost.

In conclusion, Participation has a significant effect on cost in B2B systems. If the effective elements on participation are improved by organization, they can reduce their cost significantly and make an efficient B2B system.

## VII. CONCLUSION

The effective elements on participation in a B2B system were determined in this research by collected data from Bendahari UTM as case study. In addition the effects of these elements on time and cost were analyzed. For the future, researchers can improve these elements in a B2B system to achieve an efficient participation for improving the efficiency in virtual work environments.

#### ACKNOWLEDGMENT

The authors acknowledge the founding from the portal of library (PSZ) of Universiti Teknologi Malaysia (UTM) which made this research work possible, and the contributions of chartered accountant, Mr. Mohammad Taghi Rezaei.

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