

INVESTIGATING THE CHALLENGES FACED BY GHANAIAN COMPANIES IN THEIR IMPLEMENTATION OF B2B APPLICATION INTEGRATION

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ABSTRACT: The global business environment of today requires companies to be flexible, in order to quickly react and respond to the ever-changing market. Business-to business application integration (B2BAI) can be seen as a tool which enables companies to stay competitive and it is often regarded by the theory as a must for survival in today's fierce business environment. Even though the employment of a B2BAI strategy can generate a lot of advantages and opportunities for companies operating within today's global business environment, there are still many challenges and problems to overcome in order to have a successful B2BAI solution.

It is based on this assertion that the researchers found it highly interesting to see whether the theories on B2BAI could be supported by an empirical research. The researchers in this study, have therefore studied and identified the underlying reasons and the contributing factors to why or why not companies choose to integrate externally, from the perspective of businesses/institutions that have integrated externally and those that are yet to implement it. Further, the practical benefits associated with B2BAI have been identified with possible strategies employed by Ghanaian companies and the reasons for choosing those strategies.

Besides this, a description and an explanation regarding the concepts covered by the field of B2BAI have been made in order to facilitate the understanding for the reader. Since the primary purpose of this study was to investigate the reasons behind and the contributing factors to why or why not companies choose to integrate, questionnaires were sent out to Thirty (30) companies within Eastern and Greater Accra regions. This was done purposely to gather information from both people who have experience in the concept in order to achieve the purpose of the essay.

As mentioned earlier, the scope for this research was all registered companies in Ghana, however it was delimited to a selection of the population, where the sample consists of thirty institutions situated in the Eastern and Greater Accra Regions.

It has been gathered from the empirical findings of this study that globalization is a central factor contributing to why companies chose to invest in B2BAI which also agrees with the theory in regards of that. However, the respondents do not discuss all the advantages of B2BAI mentioned in the theory and emphasize slightly different underlying reasons for choosing to employ a B2BAI strategy. The most central reason for not choosing to employ a B2BAI strategy was according to the respondents due to the lack of knowledge regarding issues relating to the phenomenon and this have not been discussed in the literature review.

KEYWORDS: B2BAI, API, CRM, EDI, XML, SOA, OASIS.

1 INTRODUCTION

Information technology has become essential to the successful operation of any enterprise. Every aspect of a business relies on some form of automation. In the past automation was custom developed. Recently the use of packaged application has reduced the amount of development. Most of these applications exist as stovepipes, applications that are self-contained. The requirement for the next generation system mandates the integration of these stovepipes with new forms of business logic. (William et al, 2001). Globalization has dramatically changed the ways of conducting business, which in turn hassled to a multitude of new opportunities and challenges for companies. The ever shifting business climate of today is fierce and for this reason companies have to be able to operate proactively, flexibly, and respond quickly to the changes, in order to attain or sustain a competitive advantage (Infoscaler Technology, 2001). It is believed that Business-to-business application integration (B2BAI) is a highly topical subject today due to globalization, as the current business environment requires companies to be flexible in their business model in order to quickly respond and adapt to market changes. B2BAI is application integration done externally across company boundaries, with trading partners or suppliers, to handle requirements that businesses might have, like for example exchanging information between trading partners to support a supply chain (Linthicum, 2004).

The concept of exchanging data over networks has existed for over two decades; it is not a new phenomenon, only the techniques for doing so are different. The structure of how information is transferred electronically has evolved over time among businesses in order to support more global and open standards, so that any business can exchange documents electronically with another (IBM Redbooks, 2005a). After having individual technologies without dependencies on other companies for years, organizations now have a need of bridges that link these different technologies together. This can be done by the application of B2BAI (Linthicum, 2001a).

The application of B2BAI renders possible the automation of business processes that incorporate a variety of packaged products, custom applications, legacy applications and systems within the company and between trading partners (Linthicum, 2004). According to Linthicum (2004) B2BAI is not only a technology set but also a strategic activity which enables business process streamlining and in turn provides a competitive advantage for a company. Despite that there are a lot of advantages with B2BAI, several obstacles and integration problems still exist. Challenges for companies deciding on external application integration today are, among others, handling dissimilarities in data or information, differences in ways of conducting business and security and reliability of communications (IBM Redbooks, 2005a).

Other concerns are the many existing technologies and standards competing on the market today and the difficulty to estimate how well the existing solutions meet the requirements of the business environment. This in turn makes the task for business managers foreseeing the future direction of B2BAI very difficult (Jauhiaine et al, 2005). The theory describes and discusses B2BAI as a very important tool in order to be successful in today's competitive business environment. Is this phenomenon as admired and wide spread in practice? The application of B2BAI has a lot of advantages but at the same time there are many challenges when pursuing a B2BAI strategy. Therefore we find it highly interesting to identify central factors and underlying reasons for choosing or not choosing B2BAI. As the literature discussing the concept of B2BAI is very diffuse we find it important to begin by clarifying the different concepts covering the field of B2BAI in order to be able to create a better understanding of the subject of study.

BACKGROUND TO B2BAI

According Samtani (2002) the business landscape of today is under constant change. The digital economy has not only shaped the way companies handle their business internally but also the way they conduct business with their customers, suppliers and distributors. The author further explains that the future wave is collaborative e-commerce and this way of doing business requires trading relationships to be dynamic, automation of business processes and increased flexibility and adaptability by the use of integration middleware based on an open architecture. B2BAI focuses on processes rather than on separate activities, this as the objective with B2BAI is to streamline processes involving two or more companies. In order for a company to be competitive in today's rapidly changing business environment, Samtani (2002) believes that strategies such as EAI (Enterprise Application Integration) and B2BAI must be implemented.

Most current business strategies such as collaborative e-commerce, supply chain management (SCM) and customer relationship management (CRM) needs EAI and B2BAI in order to survive in the fierce global business climate of today. The ideal B2BAI strategy should have an integrated, real-time application-to-application, system-to-system interaction with all the current and new business partners. The business process should be free from manual steps and instead each activity and the interaction between them should be handled automatically. Moreover, the Internet commerce transactions should be conducted securely, in real-time and be adaptable and flexible. Adaptability in order to be able to adapt quickly to changes

and flexible in a way so that it can support the various interaction modes of each partner (Samtani, 2002). Over time the structure of how information is transferred electronically among businesses has evolved. This development has occurred to support more global and open standards, so that any business can exchange documents electronically with another. During the first era National and industry-oriented EDI (electronic data interchange) data structures were developed. The electronic exchange of documents started approximately some three decades ago, with the vertical industries; which helped to define the first standards for transferring information through the supply chain. Since it was vertical industries that initiated the work, the standards that were formed focused on industries such as retail, transportation, automotive, and so on. This was happening in several countries at the same time and therefore the standards that were produced had geographical characteristics and were vertical industry oriented. This resulted in the lack of interoperability among the different standards as the data structures were overlapping and reaching across numerous industries in different geographical regions (IBM Redbooks, 2005a).

The second era introduced international EDI data structures. During this time the increasing number of EDI standards raised the implementation cost of EDI. Companies suddenly had to understand and implement different EDI data structures depending on which region they were operating in and what industries they served. After a while different industries came together and decided to create an international data standard: Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT). Nowadays, most companies that conduct business together over geographical areas uses the EDIFACT standard. The movement from industry-oriented or nation-oriented standards to more international standards is still in progress and will probably take years until it is achieved. The EDI world has however at this time agreed upon a common data structure, which in turn lessened the costs of implementing EDI (IBM Redbooks, 2005a). Throughout the third era, national and industry-oriented XML (eXtensible Markup Language) data structures entered the market. During the last two decades, the business focal point of the procurement of direct material and the transfer of goods has, of the greater part, been supported by EDI development and growth. The EDI data structures were a working concept for direct material acquisition, because of the structured character of the procurement process. This is a process where prices, contracts; delivery, shipping and many other details are negotiated and decided upon. When the Internet entered the e-commerce market and became the platform for e-commerce, XML was discovered. The benefit of XML is that it makes it possible for both humans and machines to interpret data streams.

XML also provides the ability for users with a browser to receive data structures without data modifications (IBM Redbooks, 2005a). Late in the 1990s, vertical groups teamed up again, this time to create specific vertical-industry data structures, due to the lack of XML data structure organizations. A series of XML data structures for advanced supply chain was defined by the group Rosetta Net, which also was the first to complete the task. The vertical groups started to create, publish and support their own data structures driven by the lack of agreement upon XML data structures and the perceived need to generate them quickly, for example xCBL from Commerce One and cXML from Ariba (IBM Redbooks, 2005a). During the fourth time period, the national use of XML for B2B e-commerce started and close behind came the use of XML internationally.

Issues that occurred at this point were the lack of acknowledged standards. Therefore changes were made by industry groups such as Rosetta Net to see to the international needs. E-business XML (ebXML) was recognized by some of the participants in the e-commerce community as an early leader of a global standard industry set of XML standards (IBM Redbooks, 2005a).

2 OBJECTIVES

The main objectives of this study is to investigate the underlying reasons for which companies in Ghana choose or not choose to implement B2BAI.

The specific objectives are to identify:

1. Whether or not there are benefits in implementing B2B Application Integration (B2BAI) by companies in Ghana ,and
2. The challenges faced by Ghanaian companies in their implementation of B2BAI
3. The most commonly used B2BAI strategie(s) by Ghanaian Businesses and what inform their decision.

3 HYPOTHESIS

H₁: Companies that have adequate knowledge of B2BAI will use the system for its benefits notwithstanding the challenges

H₁: Ghanaian companies that do not use B2BAI will keep away because of inadequate knowledge not because of challenges

4 METHODOLOGY

For this study the researchers adopted both inductive and deductive approach. The study consists of both primary and secondary data. The primary data has been collected through the questionnaires carried out at both companies who have implemented B2BAI as well as those who have not implemented it. The secondary data has been gathered from literature sources, such as, scientific articles, papers and periodicals. Subjects within the field of technology are constantly developing and changing and therefore the Internet has been utilized in order to retrieve up-to-date and accurate information as possible. The researchers has chosen to collect views from the respondents by sending questionnaires to them. Questionnaires have been decided on for the simple reason that it is the main means of collecting quantitative primary data.

A questionnaire enables quantitative data to be collected in a standardized way so that the data are internally consistent and coherent for analysis. Imagine how difficult it would be to analyze the data of a national survey conducted by 40 different interviewers if the questions had not been asked in a standard way, that is, if the interviewers had asked different questions using different wording and order. A questionnaire ensures standardization and comparability of the data across interviewers, increases speed and accuracy of recording, and facilitates data processing. (Malhotra, 2006; Malhotra and Peterson, 2004). According to Asamoah and Duodu, (2007) in their book "Introduction to Research Methods in Education", a questionnaire permits a wide coverage for minimum expense both in money and effort. It also affords not only wider geographical coverage than any other technique, but also reaches individuals who are normally difficult to contact. The researchers has chosen to use questionnaires for the primary data collection for the reason that, questionnaires do not call for a signature or other means of identification, it may, because of its greater impersonality, elicit more candid and more objective replies.

The population for this study consists of registered companies in Ghana. The research was further narrowed down to investigate a sample of the population, where the sample consists of registered companies in both Eastern and Greater Accra regions that have implemented B2BAI and therefore have knowledge and experience of it and those that are yet to implement it. The main reason for the number of questionnaire objects is not so much due to theoretical considerations but more practical things such as time. This was the case in this investigation, companies in Eastern and Greater Accra were chosen principally, because of time limitations. The reason for choosing respondents of different types of organization is to obtain a varied responds across several business environment. Another reason for not choosing more objects of study is that, the researchers s wanted an informed result from the investigation and by administering fewer questionnaires it was possible to get a more thorough and detailed picture of them. The selection of the respondents was done by contacting the agencies and requesting to talk with their IS managers because they have experience and knowledge of B2BAI.

5 EMPIRICAL FRAME WORK / RESULT

This section presents the results of the questionnaire given out. The questionnaire was in two parts, the first part captures the demographic information of the institutions visited. The second part on the other hand captures the respondents' awareness of B2BAI, the benefits and difficulties in the implementation of B2BAI, and the most commonly B2BAI strategies employed by the companies interviewed. In order to achieve the purpose of this study, questionnaires were given to thirty (30) companies resident both in the Eastern and Greater Accra regions. The figure below shows the distribution of the questionnaires. When these companies were asked if they are aware of B2BAI, it was observed that all the respondents indicated their knowledge of B2BAI. One major issue about this study was whether or not companies in Ghana needed the implementation of B2BAI, and surprisingly all the Thirty (30) respondents which represented 100 percent unanimously agreed that for companies to stay competitive and survive in today's fierce and ever changing business environment, they are in need of B2BAI.

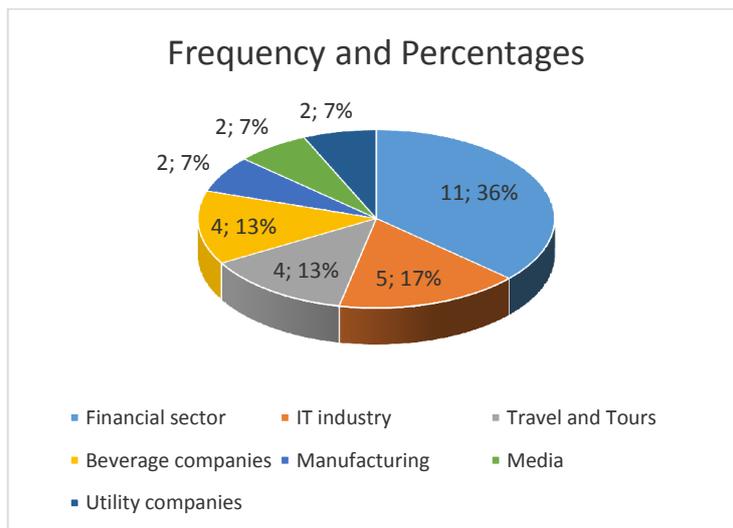


Figure 5.1 - Frequency distributions of Institutions response

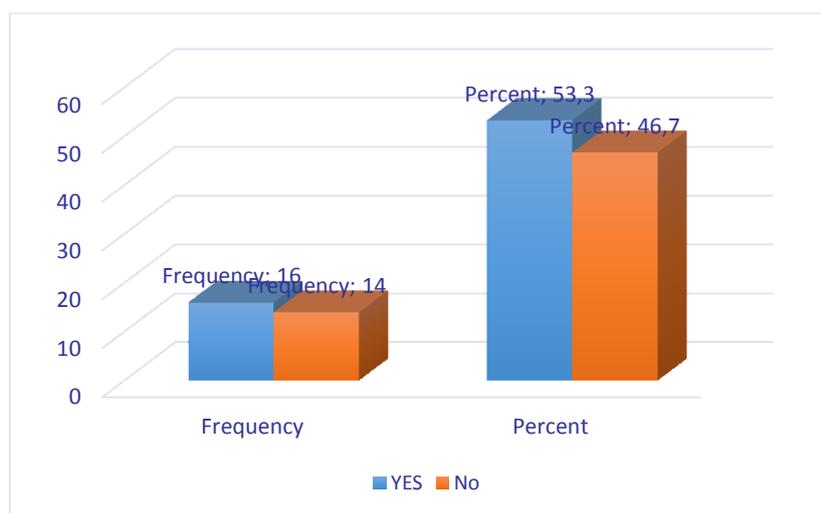


Figure 5.2 - Has your company implemented B2BAI?

As can be observed in figure 5.2, out of the Thirty (30) institutions chosen for this study, it was gathered that Sixteen (16) of them had implemented B2BAI. This represents 53.3 percent of the respondents, whereas Fourteen (14) respondents had not implemented B2BAI, and this represents 46.7 percent. The sixteen companies that admitted that their companies are indeed using B2BAI were again asked whether they were benefitting from it. Incredibly, all the sixteen (16) companies answer was yes. This represented 100 percent of the valid percentage.

One of the objectives of this research is to investigate why companies decide to implement B2BAI. Upon this objective, all the Thirty (30) respondents were asked to state the reasons that will make a company choose to implement B2BAI. Out of the thirty respondents, all sixteen (16) companies that have implemented B2BAI responded on both "Maintaining and creating existing trading relationship and "Reduce operational cost", whereas fifteen (15) responded on "Globalisation" and "Reacting and responding quickly to market changes"

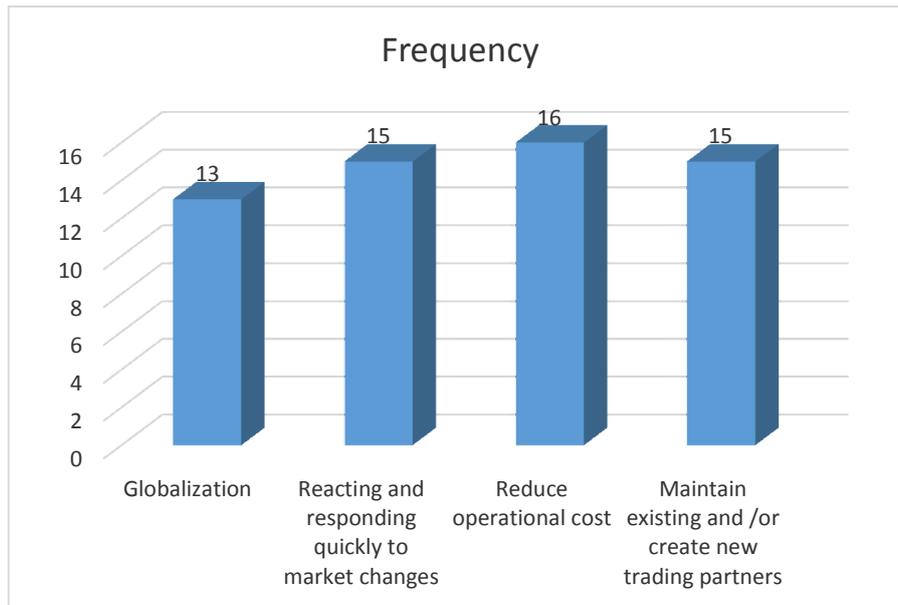


Figure 5.3 -Reasons for a company to decide to implement B2BAI

One of the objectives of this research is to investigate why companies decide to implement B2BAI. Upon this objective, all the Thirty (30) respondents were asked to state the reasons that will make a company choose to implement B2BAI. Out of the thirty respondents, all sixteen (16) companies that have implemented B2BAI responded on both “Maintaining and creating existing trading relationship and “Reduce operational cost”, whereas fifteen (15) responded on “Globalisation” and “Reacting and responding quickly to market changes”. This is shown in figure 5.2.

The fourteen (14) companies that had not implemented B2BAI were requested to respond to why they have decided not to implement B2BAI. All fourteen (14) companies/institutions representing 100 valid percent responded to the question. Figure 5.4 below, shows the resulting frequencies.

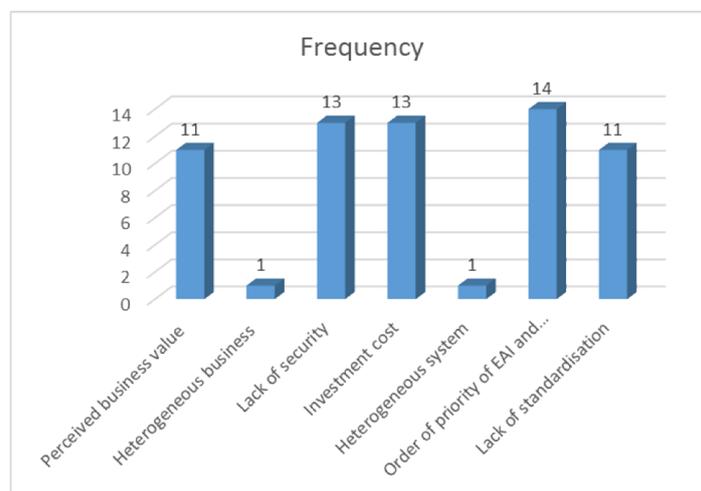


Figure 5.4 - Reasons for a company to decide not to implement B2BAI

In order to determine whether a relationship exists between the “type of institution” one belongs to and the need for B2BAI, a cross tabulation was conducted and a chi-square test was performed. From the chi-square test conducted with the results displayed in the table below, the Pearson’s R indicates a value of zero, an indication that there exist no linear relationship between the “type of institution” one works in and the need for B2BAI.

Table 5.1 – Chi-Square Test.

NAME OF INSTITUTION * The need for B2BAI implementation by companies in Ghana.

Crosstabulation

		The need for B2BAI implementation by companies in Ghana.	
		AGREE	Total
NAME OF INSTITUTION	FINANCIAL INSTITUTION	11	11
	MANUFACTURING BEVERAGE	4	4
	MANUFACTURING PLANT	2	2
	TRAVEL AND TOUR	4	4
	IT	5	5
	MEDIA	2	2
	UTILITY	2	2
Total		30	30

Chi-Square Tests

	Value
Pearson Chi-Square	0.00
N of Valid Cases	30

This is a measure of the relationship that exist between the “type of institution” a respondent belongs to and how the companies are able to stay competitive and survive in today’s fierce and ever changing business environment. The Pearson Chi-Square test measures the linear relationship that exists between the variables. From the table, the result of the test was 0.00 which is an indication of no relationship. This means that the type of institution one belongs to does not influence how the company stays competitive and also is able to survive in today’s fierce and ever changing business environment.

6 ANALYSIS

In this section the empirical findings (result) and the theoretical framework were compared and analysed.

THE CONCEPT OF B2BAI

The concept of B2BAI is rather diffuse and many different definitions exist. According to this study’s literature review, the definitions basically have the same meaning. Different authors define B2BAI as an approach which enables companies to share and exchange data and information across company borders. The indistinguishable definitions in the theory can also be mirrored in reality. It is clear that all respondents more or less agreed to the meaning of B2BAI as given by the authors in the literature review.

On the issue of companies being aware of the presence of the integration, all respondents unanimously agreed to the fact that they are aware of B2BAI. The researcher’s opinion is that companies are aware of the existence of B2BAI, and that it might have any influence on whether or not they will implement it in their companies

THE NEED FOR B2BAI TODAY

According to Samtani (2002), it is essential for companies to have integration strategies in order to stay competitive. Integration strategies as EAI and B2BAI generate dynamic trading-relationships, automation of business processes and increased flexibility and adaptability, which makes it possible for companies to react and respond quickly to the constantly changing business environment. Samtani (2002) further states that most business strategies such as collaborative e-commerce, SCM and CRM, need EAI and B2BAI to be able to survive in the tough business environment of today. All of the respondents see a rapid and steady growth within the field of B2BAI and this shows that the theory alleging the necessity of employing a B2BAI strategy in order to survive in today’s business environment, can be supported by the empirical findings,

as all respondent answer to the question on the need for Ghanaian companies to implement B2BAI was yes. For example, if the majority of a company's partners and competitors utilize this concept as a means for gaining a competitive advantage, it is believed that it would be in their interest to also do the same in order to not be driven out of competition.

Based on this the researchers s s believes that the increased demand could be a factor contributing to why companies at present chose to employ a B2BAI strategy. The respondents find B2BAI to be a matter for the executives, as from looking upon B2BAI as purely a technical matter, it has today become a management issue as it affects the business model and conveys large costs. The researchers thinks that this has contributed to the increased demand as the question of B2BAI has gained status by being an issue for the company management. Based on this the researchers thinks that for a company to survive todays ever changing business environment and also thrive, a B2BAI is a necessity.

REASONS FOR CHOOSING B2BAI

Not only is B2BAI a technology set, but also a strategic activity which enables business process streamlining and in turn provides a competitive advantage for a company, see section 2.8, (Linthicum, 2004). In accordance with the theory some of the respondents also believe that it has to be viewed as a strategic activity where integration becomes an important tool in order to make the internal as well as the external systems function efficiently together, as a mean for competition. Furthermore, the theory, see section 2.7, states that the application of B2BAI can improve a company's performance by having dynamic business relationships, real-time information, lower transaction costs, participation in online market places, streamlined business operations, XML-based integration, increased customer service and retention and opportunities to re-construct internal systems (IBM, 2005a).

Both the theory and the empirical findings regard B2BAI as a strategic tool in order to be competitive, but the empirical findings emphasizes slightly different aspects regarding the advantages/benefits generated when utilizing it as a means to become more competitive. Apart from the advantage of streamlining business processes on which they agree, benefits such as reducing costs were emphasized by the respondents. The desire of having dynamic business relationships was also mentioned by the respondents as a reason for why businesses choose to integrate. By having dynamic relationships companies are able to react and respond to the constantly changing business environment, in a much quicker and better way. B2BAI generates a lot of advantages, but these are not the only reason why it has become so topical. Samtani (2002), see section 2.4, believes that for companies operating globally, it has become more of a necessity as the business environment has become so fierce and fast changing that most of them would not survive without it. He stresses the importance of being able to quickly adapt to changes and have flexibility enough to support different interaction modes of each business partner. Even though the empirical findings indicate that the globalization process and the IT-market development require B2BAI, in order for companies to become more flexible to changes, some respondents are of the view that the use of the Internet can as well provide a company the opportunity to go global. In the end it seems like everything comes down to being able to stay competitive in today's fierce and ever-changing business environment and the findings indicate that this might be hard to achieve without the employment of a B2BAI strategy.

REASONS FOR NOT CHOOSING B2BAI

The theory mentions a number of obstacles that can make the implementation of B2BAI more difficult. Examples of these are; heterogeneous data or information, heterogeneous business processes, dynamic business and technology environment, security and reliability of communications, organizational autonomy and heterogeneous systems (IBM Redbooks, 2005a). Only one of the above stated problems have also been mentioned by the respondents as a contributing factor when companies choose to not implement B2BAI. This factor is lack of security and reliability of communications. The researcher is of the view that security, as mentioned both in theory and by the respondents, might have an influence on the choice of whether to integrate externally or not since majority of the respondents agreed to it. The respondents have also identified other factors influencing this choice, such as a lack of knowledge regarding for example investment costs and the lack of information provided regarding the benefits and value of B2BAI. In the researcher's opinion, the lack of perceived value could also be a reason for why companies might be hesitant and reluctant towards adopting B2BAI strategies. It is obvious that a company will find it very difficult to commit to something they do not understand or see the potential value of. According to the theory, an internal integration is necessary before moving towards an external one, this as companies might have processes ranging across several internal applications. That is why companies first have to make sure they can communicate internally, before considering B2BAI, (IBM Redbooks, 2005a). The respondents unanimously agree to the theory upon the advantage of making an internal integration before the external. The empirical findings point out that there is a specific order of priority regarding EAI and B2BAI, it is believed that companies can feel intimidated of doing an external integration before having done an internal. The reason for this might be that they have the perception that it is required to start by integrating internally in order to be able to become successful in the external integration.

HYPOTHESIS

Hypothesis One:

- H₀:** Companies that have adequate knowledge of B2BAI will not use the system for its benefits notwithstanding the challenges.
- H₁:** Companies that have adequate knowledge of B2BAI will use the system for its benefits notwithstanding the challenges

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Scoring	Equal variances assumed	5.591	.033	23.642	14	.000
	Equal variances not assumed			18.256	4.879	.000

The computed *t* of the test is 23.642 with *df* 14, the *p*-value is 0.000. Since the *p*-value of the test is 0.000 and this is less than 0.05 (i.e. $P = 0.000 < 0.05$ significant level), at 0.05 level of significance, the null hypothesis is rejected and concluded in favour of the alternate hypothesis that companies that have adequate knowledge of B2BAI will use the system for its benefits notwithstanding the challenges. This confirms why the majority (16 companies out of 30) forming 53.3% chose to use B2BAI while the remaining 46.7% of them chose not to use the system. Despite the challenges identified, the most outstanding reason for using the B2BAI is business and customer requirement while few of them in addition use the system based on the fact that it is a company policy. This view is supported by Linthicum (2004); B2BAI is a strategic activity rather than a technological set that is meant to help companies have a competitive advantage. This also suggests that, there are challenges of implementing B2BAI but if the decision to use it well considered, it will in the long run have great effect on the company's competitive abilities.

Hypothesis Two:

- H₀:** Ghanaian companies that do not use B2BAI will not keep away because of inadequate knowledge not because of challenges.
- H₁:** Ghanaian companies that do not use B2BAI will keep away because of inadequate knowledge not because of challenges.

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	Df	Sig. (2-tailed)
Scoring1	Equal variances assumed	11.913	.005	3.724	12	.003
	Equal variances not assumed			6.034	9.000	.000

The computed *t* of the test is 3.724 with *df* 14, the *p*-value is 0.003. Since the *p*-value of the test is 0.003 and this is less than 0.05 (i.e. $P = 0.003 < 0.05$ significant level), at 0.05 level of significance, the null hypothesis is rejected and concluded in favour of the alternate hypothesis that Ghanaian companies that do not use B2BAI will keep away because of inadequate knowledge not because of challenges. Out of the total number of respondents, 46.7% of them do not implement B2BAI due to lack of knowledge (perceived business value, security, investment cost and the order of priority of EAI and B2BAI) and standardization (lack of flexibility). Some of the challenges associated with B2BAI include handling dissimilarity in data, differences in ways of conducting business and security and reliability of communications (IBM Redbooks 2005a). None of these challenges formed the basis for which the companies decided not to use the system

7 CONCLUSION AND RECOMMENDATIONS

The evidence gathered from the empirical research show that companies regard the concept of B2BAI more seriously nowadays. This is because it comes with a lot of benefits which will make a company stand tall among their equals and also thrives in this fierce and ever changing market. The confusion of B2BAI seems to exist in theory as well as in practice and the interpretation of it is that the phenomenon is not known by many Information System managers in the Ghanaian business terrain. Companies that have not implemented B2BAI may have their own reasons for doing so according to the empirical findings, but again the findings also indicate that they are losing a lot for not integrating externally. Furthermore, factors and reasons affecting the choice of whether to integrate externally or not and the benefits associated with B2BAI have been identified. Again, the benefits associated with B2BAI, the most commonly strategies employed and the reasons behind the choice of strategy have also been identified.

REASONS FOR CHOOSING TO IMPLEMENT B2BAI

In drawing a conclusion after analysing the data collected in this research, is that the main contributing factor for choosing to integrate externally is globalization. As in order for companies to stay competitive and survive in today's fierce and ever changing business environment they are in need of B2BAI. The reason for this is that it can be used as strategic tool to gain competitive advantage. By pursuing a B2BAI strategy companies can react and respond quickly to market changes as it generates dynamic trading relationships and increased flexibility and adaptability. Moreover, it enables the streamlining of business processes and improves the operational efficiency, which in turn can lead to possible reductions of costs. Besides this, another reason might be the pressure from trading partners; as companies might feel forced to employ a B2BAI strategy in order to maintain present trading relationships or create new ones. This is also summarised below as the benefits of B2BAI implementation.

BENEFITS OF B2BAI:

- Globalization
- React and respond quickly
 - Dynamic trading relationships
 - Flexibility and adaptability
- Reduce costs
 - Improve operational efficiency
 - Streamline business processes
- Maintain existing and/or create new trading relationships

REASONS FOR NOT CHOOSING TO IMPLEMENT B2BAI

It appears to be several reasons behind why companies choose to not implement B2BAI. Upon careful analysis of the results gathered from the questionnaire, the researcher came to the conclusion that the most likely reasons for why companies not choose to implement are the lack of knowledge and a lack of standardization. The lack of knowledge regards issues such as, security, perceived business value, investment costs and the order of priority of B2BAI. Even though security might not be regarded as a big issue when conducting an external integration according to the empirical findings, the interpretation is that the lack of knowledge regarding security still can be an influencing factor to why companies hesitate to invest in an external integration. Furthermore, if companies do not understand what B2BAI is and how it can generate business value, they will probably not want to invest in it. Regarding investment costs, companies might have the idea that B2BAI is something expensive and therefore feel reluctant towards it. As the theory and the empirical findings have different opinions regarding the order of priority of EAI and B2BAI it is concluded that companies might think that they need to do internal application integration before an external, which therefore could be a contributing factor to why they might chose not to integrate externally. The lack of standardization appears to be another reason behind companies' choice to not implement B2BAI, as they might have the impression that it could increase the complexity of the implementation and reduce the flexibility of the solution. This is again summarised below.

- Lack of knowledge
 - Perceived business value
 - Security
 - Investment cost
 - The order of priority of EAI and B2BAI
- Lack of standardization
 - Lack of flexibility

RECOMMENDATIONS

Based on the research, the researcher offers the following suggestions;

1. The field of B2BAI is very extensive and not that widely studied, therefore several areas of this area of knowledge are yet to be explored. As earlier mentioned it could be interesting to compare this essays result with the service providers of the respondents.
2. Another idea would be to study the more technical aspect of the concept and evaluate the existing products and standards existing today on the market.
3. Ghanaian businesses should open their doors for students who undertake researches in order to make their data collection exercise smooth and easy.
4. Information system managers of businesses in Ghana should undertake upgrading causes in order to be abreast with current trends in the IT field.
5. B2BAI is a very nice phenomenon, Ghanaian businesses should embrace the concept to enhance their productivity and also trade with their partners externally.

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