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# Factors Influencing Negotiation in the Sourcing Process between Partners in E-Procurement: A Focus on Actors

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# FACTORS INFLUENCING NEGOTIATION IN THE SOURCING PROCESS BETWEEN PARTNERS IN E-PROCUREMENT: A FOCUS ON ACTORS

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## Abstract

*Negotiation is an essential business activity for establishing trade relationships between partners (Yuan and Turel 2004). As the business environment becomes more dynamic in this global setting, negotiation between partners is required more often. Negotiation is the key decision-making approach used to reach consensus whenever partners cannot achieve their goals (Thompson 2000). Advanced technologies such as e-procurement can facilitate effective solutions for negotiation between trading partners (Bichler et al 2003). With the shift from traditional procurement to electronic procurement, there is a need to explore the social issues in the negotiation process and in the electronic procurement environment in particular. Actor Network Theory (ANT) will be used as guidance. Through a case study at an Australian University, factors influencing negotiation in the sourcing process between partners in their e-procurement environment were identified. The significance of this research is to provide knowledge to practitioners on the importance of the negotiation process between partners in an e-procurement network. Furthermore, identifying and understanding the social issues that influence the negotiation process will improve the value chain between partners. As such, it is hoped that greater success with e-procurement will be achieved.*

*Keywords: Negotiation, E-procurement, Case study, Social Issues, Actor Network Theory*

# 1 INTRODUCTION

Negotiation is an essential business process for establishing trade relationship between partners (Yuan and Turel 2004). Negotiations between partners are required frequently with the use of Internet-based technologies to procure goods and services that usually involves complex negotiation (Cerquides et al 2007). With advanced web-based technology such as the Internet and extranets, the negotiation process has become a prominent issue in the literature and in particular is notified in the area of e-procurement (Aguiler et al 2008, Bui et al 2006, Bajari et al 2008). Kurtzberg and Medvec (1999) stated that there are many elements of a relationship that can be impacted by negotiation such as the relationship between parties, communication and their level of trust. With the involvement of many actors in the negotiation process such as the procurer and supplier, issues influencing negotiation, this research will explore the factors influencing negotiation in the sourcing process between partners in an e-procurement network. By identifying factors influencing negotiation in an e-procurement network, this will help answer the research question: how does the actor in an e-procurement network influence the negotiation process?

The significance of this research is to provide knowledge to practitioners on the importance of the negotiation process between partners in an e-procurement network. By identifying and understanding the factors that influence the negotiation process, the value chain between partners will be improved in the e-procurement network. By improving the negotiation process, it is hoped that greater success with e-procurement will be achieved.

The structure of this paper is as follows: the next section will discuss the relevant literature and explore the use of Actor Network Theory (ANT) as a theoretical background. The subsequent section will discuss the research method used for data collection and analysis. The final section will provide a discussion of the findings of the factors influencing negotiation in an e-procurement environment between procurers and suppliers as well as provide a conclusion.

# 2 LITERATURE REVIEW

Procurement is a core activity in a business (Turban et al 2008) and sourcing is one of the critical steps in buying goods and services, where individuals or groups analyze, assess and select a vendor and their goods and services based on certain specifications and requirements (United Parcel Service of America 2005). Aguiler et al (2008) claimed that the sourcing process for multiple goods or services usually involves complex negotiations that include a discussion of a products features as well as quality, services and availability issues. As such, there is a need for negotiation to be integrated into the strategic sourcing process. Furthermore, managerial teams, such as supply managers and purchasing managers, need to understand the importance of negotiation in strategic sourcing (Smeltzer et al 2003). Negotiation is one of the elements in the sourcing process (Puschman and Alt 2005) and it is one of the factors that have a large influence in the implementation of Internet sourcing strategies (Smeltzer et al 2003). When electronic commerce moves into a business-to-business (B2B) market place, negotiation becomes more complex, the contracts can be done electronically with communication among trading partners occurs throughout the system, which includes negotiating a supply contract between manufacturers and suppliers. Schoop et al (2008) claim that to support business negotiations with electronic tools effectively, a deep understanding of real life business negotiation is required.

E-procurement is the process of utilizing web-based technologies to support the identification, evaluation, negotiation and configuration of optimal groupings of trading partners into the supply chain network, which can then meet demands with greater efficiency (Minahan 2001). E-procurement is not one single application (Knudsen 2003). Rather, e-procurement consists of many different tools. De Boer et al (2002) identified six forms of e-procurement: e-sourcing, e-reverse auctioning, e-tendering, and e-informing, e-MRO and web-based ERP. Puschman and Alts (2005) claim that most companies operate multiple e-procurement solutions. In explaining negotiation in the e-procurement environment, Actor Network Theory will be used as a lens for this research. The next section will

discuss the use of Actor Network Theory (ANT) for understanding the negotiation process in an e-procurement environment.

### **3 ACTOR NETWORK THEORY AS LENS**

Actor Network Theory (ANT) is a social theory of technology (Hanseth et al 2004). Latour (1992) states that ANT deals with the socio-technical by denying that purely technical or purely social relations are possible, and considers the world to be full of hybrid entities. As such ANT proposes a socio-technical account in which neither social nor technical positions are privileged (Latour 1992). ANT is used to investigate issues in the negotiation process that incorporate human actors such as buyers and suppliers and how the interaction between these actors affects the negotiation process as well as identifying the factors that influence the negotiation process. One concept in ANT will be used to explain the relationship of factors influencing negotiation in the e-procurement environment - the actors. This concept is applicable because of the identification of actors, both human and non-human actors in the negotiation process in e-procurement are critical to effective negotiation.

The concept of the actor in ANT is defined as “any element which bends space around itself, makes other elements dependent upon itself and translates their will into the language of its own” (Callon and Latour 1981, p. 286). Actors in ANT consist of human actors and non-human actors. Common examples of actors include humans, collectivities of humans, texts, graphical representations and technical artifacts and computers. Latour (2005) provides the analogy of an ‘actor’ in the theatre. The ‘actor’ constantly suggests that the source of inspiration of the action is somewhere else; perhaps the audience, backstage, the crew, the props, the playwright or the character. Latour (1992), in viewing non-human actors as actors, highlighted the issue how can non-human actors have interest? The interests of non-human actors can be equated to the interest that has been inscribed to it. For instance, it may be argued that a car’s seat belt has the interest of passenger safety that was inscribed in it by the designer.

As this research is about negotiation in e-procurement at an Australian University, there are human and non-human actors involved. The procurer from the Australian University and the suppliers of the university will be the human actors in the e-procurement environment. The remaining actors will be considered as non-human actors and include web-based technologies that have been used via the Internet, which enables actors to communicate in negotiating and exchanging goods and services (Schoop 2008). Each actor has their own responsibilities and roles in ensuring the success of the negotiation process in the e-procurement environment. The relationship amongst actors plays an important role in e-procurement practices. Reunis et al (2008) identified the actors involved in their research on the intra-organizational spread of e-procurement adoption from one actor to another in purchasing organizations from two categories: experts and industry practitioners. In addition, Hardy and William (2008) in their study on governmental e-procurement policies provided examples of actors as consultants, IT providers, buyers and suppliers. By using Actor Network Theory (ANT) as a lens or guide for this research, it is believed that there will be actors both human and non-human that will influence negotiation in the e-procurement environment identified through this research.

### **4 METHODOLOGY**

The qualitative method is used to enable the researcher to answer the research question. Furthermore, this study will be driven by the interpretive paradigm (Denzin and Lincoln 2000) as interpretive research attempts to understand a phenomenon through accessing the meanings that participants assign to them (Klein and Myers 1999). This research adopts the case study research method as this is an exploratory study and the researcher needs to obtain in-depth data on negotiation in the e-procurement environment. The case study was conducted at an Australian University in Victoria between two parties: the Australian University as a buyer and two companies that are the major suppliers to the university. Two representatives from the Purchasing Department of the university are Director of Purchasing Department and the Procurement Manager and one representative from each supply company were interviewed via semi-structured interviews. The interviewer recorded the

interviews with permission of the interviewees and made use of written notes during the interviews. The one-on-one interviews took approximately 45-60 minutes.

The data collected from the face-to-face interviews was analyzed using content analysis. Before the content analysis technique was used to analyze the data, all interviews were transcribed. After the interviews were transcribed, the researcher used the eight-steps proposed by Tesch (1990) for coding the collected data. After completing the coding process, categories were generated. The various codes were then compared based on differences and similarities and sorted into sub-categories and categories, which constitute the manifest content (Graneheim and Lundman 2004). Thirdly, the underlying meaning, or the content of the categories were formulated into specific themes (Creswell 2003, Graneheim and Lundman 2004). Finally, the researcher interpreted the data, based on the question “what were the lessons learned”. These lessons were based on the researcher’s personal interpretation and the meanings derived from a comparison of the findings with information from the literature review (Creswell 2003). The findings from the case study will be discussed in the next section.

## **5 FINDINGS**

This section will discuss the factors influencing negotiation in an e-procurement environment from two different perspectives, the procurer and suppliers at an Australian University. Categories emerged from an analysis of the interview on factors influencing negotiation in the e-procurement environment at the Australian University on behalf of the procurer and suppliers and are discussed below.

### **5.1 Buyer Perspectives**

- Background of the procurer organization

The Australian University is organized into three academic faculties and eight service departments. One of the service departments is Resources. The purpose of the Resources Department in the university is to ensure effective and rigorous planning, measurement and reporting of financial outcomes to achieve university strategies in a controlled manner. There are seven groups organized under the Resources department: Accounting Unit, IT Unit, Human Resource Unit, Treasury Unit, Law Unit, Management and Property Unit, and Information and Web Unit. One of the departments provided under the Accounting Unit is the Purchasing Department. The Purchasing Department provides services to the entire university. The role of this unit is to achieve substantial savings through the review of sourcing and procurement options across the university based on \$140 million expenditure in goods and services. The contract manager in the Purchasing Department at the Australian University is the person that has sole responsibility in handling all procurement activities. There are four specific activities that assist the university to acquire the best products and services at an effective cost to the university: strategic sourcing and procurement services; university approved supplier; tenders; and fair-trade.

E-procurement was introduced to the university in 2004. Currently, the university has improved the system by having full end-to-end system support for the entire procurement cycle from e-tendering through to contract management facilities via software called “wide windows” (name changed to provide anonymity). The e-tendering system assists the Purchasing Department in processing the tender from documentation until posting the tender to the website. The submission of the tender from potential suppliers’ to the university is done electronically and this expedites the supplier selection process. Besides the e-tendering system, the university uses another system called ‘MayaExpress’ (name changed to provide anonymity). MayaExpress is an online ordering system for the purchase of approved standards of furniture, office supplies and merchandise. Approved staff throughout the university can use this system to order goods. Approved staff log in to MayaExpress to view the products offered by Maya and enable staff to order on-line. The order will immediately go to the Maya warehousing system via a paperless transaction. The order can then be delivered directly, on time, to the university.

- Factors influencing the negotiation in an e-procurement from procurer perspectives

Nine categories emerged from an analysis of the interviews and the descriptions for each category are based on the interviews with representatives from the Australian University: the director of Strategic Sourcing and Procurement Department and the Procurement Manager from the Strategic Sourcing and Procurement unit at RMIT University. A summary of the categories is provided in Table 1.

No.	Categories	Description
1	Relationship with supplier	A relationship with suppliers needs to be built, managed and maintained by one person. The contract manager in the university is responsible to manage face-to-face relationships with current suppliers. If the Purchasing Department decides to change suppliers, the contract manager will help to create a contract with the new supplier. The relationship that the procurer has with the market is a way the procurer's organization maintains the relationship with trading partners. The way procurers treat the market will influence the negotiation process. For instance, maintaining a good relationship with past supplier's means that the procurer's organization also maintains the market relationship in a positive manner and the way organizations treat the market can improve the service through negotiating a better price.
2	Trust	Trust needs to be earned with the trading partner. The trust earned will take several steps. Trust needs to be built through conversations, providing information, developing relationships, sharing knowledge and working together with common goals and the ability to solve problems together. Trust can be built through having a long term relationship with suppliers. For instance, according to the contract manager at the Australian University "you may set-up a contract in Australia with e-procurement through sending an e-mail on the contract details and say, 'we can do this and do that and I will protect your IP', however, there is no guarantee they will follow the contract unless you have a relationship with that company."
3	Skills of negotiator	The skills negotiators undertake in e-procurement become important. The contract manager is responsible in handling negotiation at the Australian University. The negotiator needs to be able to build the relationship by being friendly, understanding and thinking about win-win outcomes for both parties. Negotiation with suppliers might be harsh and tough, thus communication skills are essential for the contract manager to build the relationship with supplier in the Australian University.
4	Culture	The cultural issue needs to be acknowledged, addressed, incorporated and understood by the organization. As stated by contract manager "you can't change culture, thousands of years of cultural background wouldn't change because of the system". For instance, in Asia, the relationship is so important and might build the relationship over two years before you actually do a deal to create a contract.
5	Sustainability Issues	Sustainability refers to working together to find the best solution for both parties based on the limited resources that occur. Partners must strive for the best decision not only based on one factor in decision making. However, taking into consideration all factors, either social, such as the relationship and collaboration, or economic, such as price and quality of goods and services procured that influence negotiation in the e-procurement environment. For instance, there is high demand on fair-trade products by users in the university, which Maya cannot fulfill. Thus, the contract manager from the Purchasing Department will negotiate by working together with Maya to ensure they will be able to supply enough without compromising the quality of products and future plans.

6	Collaboration	E-procurement allows many stakeholders involved in negotiation to collaborate either through inter-organizational and intra-organizational systems. Mutual benefits for all stakeholders involved will be the greatest concern amongst all stakeholders involved in the negotiation process. For instance, for the Australian University to be recognized as a Fair-trade organization (through certification provided by the Fair-trade Association in Australia), there are many parties involved in the negotiation process such as: Maya as the appropriate supplier to provide fair-trade products such as coffee; the Fair-trade Association that will acknowledge the university as a fair-trade organization; and the Australian University as a supporter of the fair-trade organization. These are the examples of the stakeholders that collaborate to ensure the negotiation process succeeds.
7	Win-win outcome	Each party involved in negotiation will obtain the best result out of the negotiation process for themselves. For instance, for the university to be recognised as a Fair-trade organization, there are many parties involved that will have their own vision of gaining benefits based on the collaboration. Maya will gain benefits by earning a profit for selling fair-trade products as a supplier. The University will gain benefits in terms of the recognition by the public as a supporter of the fair-trade organization.
8	Corporate social responsibility	With similar responsibilities the corporate social responsibility that each organization is involved with can be achieved without difficulty. For instance, when working with the contract manager to create the scope of services, one particular aspect that was discussed was corporate social responsibility. For example when you want to purchase paper, you know that lots of companies promise they will provide [environmentally] green paper, however when looking at the details, the green paper was recycled paper that came from Europe and was transported on a plane the emits large amounts of carbon. When you create the scope to purchase paper, you need to specify certain minimum standard environmental requirements.
9	Value for money	The value discussed throughout negotiation is concerned with the complexity of products and services procured. Value is not just about price. For instance, if it is simply a pen and every pen is considered the same, then price becomes a priority factor in negotiations between trading partners because there are less switching costs involved. However, if high value complex services and products are being traded, then social factors such as the relationship with the supplier and win-win outcomes need to be considered rather than just price. As stated by the contract manager at the Australian University is that “the principal you work for is value for money, however, value is not just about price, it is about other things, too.”

*Table 1: Summary of categories influencing the negotiation in e-procurement from the procurer perspective*

All nine factors influence negotiation in the e-procurement environment at the Australian University, and are related to each other. For negotiation in e-procurement to succeed, the relationship with suppliers needs to be built, managed and maintained. By maintaining the relationship with the current suppliers or market, trust can be built. Trust can be built through sharing knowledge and working together with common goals and the ability to solve problems together. By having trust in the business relationship, the negotiation process can run smoothly. The negotiation process can also run smoothly through win-win outcomes, where each party will obtain the best result for them out of the negotiation process. The collaboration amongst stakeholders to achieve win-win outcomes can be achieved through the understanding of the partner’s culture and the skills of the negotiators. The understanding of value for money is not only concerned about the price as the sole determinant but

also how sustainability can be maintained. Thus, all issues identified above are needed in the negotiation process in the e-procurement environment.

These issues need to be addressed in different stages of the negotiation process by the procurer. This is to ensure that the negotiation process will run smoothly throughout the entire negotiation process. For instance, the skill of the negotiators in terms of communication skills is essential before the negotiation begins and continues throughout the negotiation process. The skills need to be maintained even after negotiation finishes. This is due to the market relationship that still needs to be maintained to obtain future benefits out of the relationship, such as getting better prices in the negotiation process in the future. The next section will discuss the factors influencing negotiation in the e-procurement environment at the Australian University from the suppliers' perspective.

## 5.2 Seller Perspectives

- Background of suppliers companies

The university has thousands of suppliers due to their wide variety of needs. Due to this, the university aggregates and centralizes contracts for key commodities including goods and services such as property and building management-related suppliers, ICT suppliers, stationary and others. For this research, the goods and services procured by the Australian University comes from two major suppliers: Prima and Maya (alias provided in order to keep anonymity). Both companies are publicly listed companies. Table 2 below represents typical products and services procured from Prima and Maya respectively.

Companies	Products	Services
Maya	Office supplies, furniture, merchandise	
Prima	Photocopies Printing <ul style="list-style-type: none"> <li>• Brochures</li> <li>• Envelopes</li> <li>• Business card and etc.</li> </ul>	Printing <ul style="list-style-type: none"> <li>• Examination printing</li> <li>• Examination submission</li> <li>• Job submission</li> </ul>

*Table 2 Products and services procured by the Australian University from Prima and Maya.*

Prima and Maya were recognized as major suppliers of the university and have a long term trading relationship with the Australian University. Maya has been a supplier with the Australian University for approximately 20 years and Prima has been a supplier for nearly 30 years.

- Factors influencing the negotiation in an e-procurement from the supplier perspective

Six categories emerged from an analysis of the interviews and the descriptions for each category are based on the interviews with the representatives from Prima and Maya. A summary of the categories is provided in Table 3.

No.	Categories	Description
1	Communication Issues	Open communication is needed when dealing with trading partners. Open communication means that both parties can openly discuss any problems concerning products or services but the communication between trading partners still needs to be conducted through face-to-face negotiation. For instance, the negotiator from Prima can openly discuss with the contract manager from the Australian University on issues of print copy technologies. Prima provides suggestions about the best solutions for print copy use for the benefits of the university in terms of the cost and the effectiveness of the print copy product.
2	Trust	Trust means both parties need to respect each other and understand their needs in the transaction. Both organizations need to understand what they are trying to



		<p>achieve throughout the negotiation process. Trust also refers to the person's ability to perform (deliver goods and services) based on promises made. For instance, the negotiator from Prima has promised to the Australian University that they will provide equipment that will support printing services.</p> <p>In the instance that the company cannot fulfill the promise there will be no loss of business because of the relationship and trust Prima has with the Australian University.</p>
3	Culture	<p>Culture is about dealing with lots of different behaviors of people in business transactions from different countries. You need to have people that understand the culture of the people that you negotiate with. For instance, Prima is a Japanese company that operates in Australia, the way the company works and thinks is influenced by the Japanese management style culture. However, western companies such as Australia follow an individualistic approach (Hofstede, 1980) and think of themselves when involved in the negotiation process.</p>
4	Goodwill/ Reputation	<p>Maintaining the good name of the organization based on the products and services sold to the client. The negotiation processes relies on the reputation of the business that the procurer is dealing with. For instance, Prima not only sells services, the company also sells the good name of the company.</p>
5	Relationship with client	<p>Relationships with the client refers to a partnership where there is a need for open and honest communication between trading partners at the initial stage of negotiation to build the transparency between trading partners. Relationships also refer to how you structure your thoughts about trading partners and collaborate technically and strategically in the marketplace. For instance, Maya set-up an on-line ordering system for the Australian University. The on-line ordering system helps the approved staff throughout the university to make an order on-line. The order will immediately go to the Maya warehousing system via a paperless transaction. The order can then be delivered directly, on time to the university.</p>
6	Instability of market value	<p>The instability of market value is due to high competition of products and services sold in the market. So, as a supply company, to compete with other suppliers, there is a need to have a strategic plan in handling negotiations. For instance, Prima diversified its services through selling products such as printing devices and printing services to the Australian University.</p>

*Table 3: Summary of categories influence negotiation in an e-procurement from supplier perspectives*

Six factors influence negotiation in the e-procurement environment at the Australian University from the supplier's perspective. The relationship with the clients can be strengthened through open communication with clients. Through open communication, trust can be built. This can be done if the suppliers are able to keep promises made. By having trust between trading partners, issues such as the instability of the market can be resolved through negotiation with trading partners. The instability of the market value through higher competition with other suppliers in the market will potentially cause the supplier to lose business with trading partners easily. However, with trust built between them and the goodwill of the supplier's business with trading partners, negotiation can run smoothly.

## **6 ANALYSIS USING ACTOR NETWORK THEORY AS A LENS IN NEGOTIATION IN AN E-PROCUREMENT ENVIRONMENT**

The involvement of human actors in the negotiation process in an e-procurement network is solely between procurers and suppliers. However, there are many non-human actors involved rather than just human actors in the negotiation process. The use of electronic procurement to assist the procurer and suppliers in the Australian University e-procurement environment includes: e-tendering, e-reverse auctions, and e-mail that influence the negotiation process. By using e-procurement systems, the procurement process can be expedited to procure goods and services more effectively. The process of documenting the tender, setting-up the tender, posting the tender and submitting the tender is done electronically by the Australian University. The submission of the tender from potential suppliers' to the university is also done electronically and this expedites the supplier selection process. In addition, the ordering system for the purchase of goods is done electronically, which assists in the order being delivered directly on time to the university. Based on the interaction amongst the actors either human or non-human, several networks can be formed in negotiation in the e-procurement environment. A new network would consist of electronic networks, social networks and supply networks. The electronic network can be identified from the use of e-procurement devices such as e-tendering, e-mail and ordering systems used by the Australian University and suppliers. The social network can be identified through the factors that influence negotiation in e-procurement by both parties; and the supply network can be identified through the interaction among the procurer, supplier and other inter-organisational and intra-organisational parties. Each network can be integrated from and with each other to form a new network for negotiation to occur in the e-procurement environment. As such, the value chain among the actors involved in negotiation can be improved.

The concept of the actor is about implying that each actor can be defined and understood only in relation to other actors. Negotiation in the e-procurement environment between trading partners can be successful if each actor influencing negotiation is defined as an essential element in the e-procurement network. Each of the human and non-human actors is related to each other in creating a new network. With a new network structure for the negotiation in the e-procurement environment, the negotiation process can be conducted more effectively than before e-procurement was implemented. In ensuring that the effectiveness of negotiation between trading partners occurs, the Australian University and their suppliers need to have a mutual understanding on the factors that influence negotiation in that e-procurement environment. This can be seen from the similarities and differences in factors influencing negotiation in e-procurement. Factors such as the relationship with suppliers or clients, trust and culture are similar factors that are identified by the researcher through the interviews with the procurer and suppliers at the Australian University. The relationship between two trading partners needs to be maintained to ensure that the negotiation process can succeed. The relationship can be maintained through the mutual understanding that both parties will earn win-win outcomes through the negotiation process. Through the mutual understanding of both parties, trust between the two trading partners will be maintained. Trust is about understanding the other parties' needs (according to the Contract Manager at the Australian University). Through the trust that is being developed between trading partners, and the relationship that has to be maintained, cultural issues can be resolved. Culture is about understanding how other people work (according to the Manager at Prima). Through the understanding of the way people work in different environments then the negotiation process can operate more effectively.

## **7 CONCLUSION**

Through this case study, the researcher discovered the role of non-human actors playing important roles in the negotiation process in an e-procurement environment. Each non-human actor has its own roles and interests in making the negotiation process in the e-procurement environment successful. One of the roles includes the social issues that become essential factors in decision making to ensure successful negotiation in the e-procurement environment. Through the integration of social issues, a strategy to assist negotiation in e-procurement will help negotiators in making decisions effectively. The role of e-procurement devices such as e-tendering, e-mail and ordering systems as devices help

the procurer and suppliers expedite the negotiation process. By identifying the roles and interests of each of human and non-human actors involved in negotiation in the e-procurement environment, a new network can be formed. By having a stable network, the value chain among all parties involved in the negotiation process can be improved.

Through the use of Actor Network Theory (ANT) as a lens, in particular the concept of the actors, the researcher can identify the important values from the procurer and supplier's perspective in negotiation in the e-procurement environment effectively. In addition, ANT theory can be used as a strategy to analyse and understand the issues that occur in an organization. By knowing the values influencing the negotiation process between trading partners, it is hoped that greater success with e-procurement will be achieved.

The limitation of this case study is that not all concepts of ANT are applied to explain the phenomena. This is because some concepts are not directly related to the phenomena being explored. In addition, this case study is only conducted at one university. Other similar case studies should be conducted in other universities internationally. Future work may first deepen the existing analysis on distinguishing the roles of actors in suppliers then other cases may be analysed if possible to replicate or compare the findings.

Finally to conclude this research, negotiation in e-procurement is a complex network that relates to the involvement of human and non-human actors. Negotiation in e-procurement is essential in procuring goods and services between trading partners. Negotiators need to understand and be alert of the importance of factors influencing negotiation in the e-procurement environment. In addition, the use of e-procurement can enhance the collaboration among stakeholders involved in business trading.

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