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Cultural Challenges on Information Technology Outsourcing

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Abstract—Outsourcing in information technology (IT) industry is growing exponentially. Numerous articles have covered the reasons why companies choose to outsource. In this research, the authors have looked into the challenges that may arise from IT outsourcing with a specific focus on the cultural concepts of this booming business. This paper can serve as a brief guideline on how cultural differences can influence IT outsourced projects and what practical management can be applied to address those challenges in order to facilitate the process of outsourcing. In doing that, this paper has adopted a qualitative approach to find the answers with the use grounded theory. The research is based on literature review by studying recent relevant articles and published sources which provide a comparative basis of analysis. The result has shown that cultural factors not only directly play a vital role in the success of IT outsourcing projects, but also have great impacts on critical domains across the cooperation between outsourcer (client) and supplier (vendor) including perception, communication and relationship. Thus, prior to any IT outsourcing collaboration with foreign cultures, it is imperative to enhance the cultural awareness of both participants of client and vendor to prevent any probable challenges that may lead to a project failure.

Index Terms—Outsourcing, IT, culture, challenge.

I. INTRODUCTION

Outsourcing and offshoring have become pervasive in today's business world. According to Greaver II (1999), "outsourcing is the act of transferring some of an organization's recurring internal activities and decision rights to outside providers, as set forth in a contract." (p.3)

Outsourcing implies to have a contract with an external provider to performing task outside the company (Holmstrom et al., 2008) and outsourcing is not just contracting out (Embelton and Wright, 1998). Greaver II (1999) then provides six categories to explain why companies tend to outsource:

- Organizationally driven reasons: for instance increasing product or service values and customer satisfaction
- Improvement driven reasons: such as improve management and performance or access to more resources
- Financially driven reasons: such as generate cash by transferring assets to external providers

- Revenue-driven reasons: such as obtaining market access and business opportunities through providers' networks
- Cost-driven reasons: such as reducing costs through better provider performance and lower costs
- Employee-driven reasons: such as enhancing commitment and energy among employees by focusing on non-core areas

The same author then distinguishes outsourcing with strategic outsourcing explaining that strategic outsourcing takes outsourcing to a higher level in which important questions deal with finding the relevance of outsourcing to an organization and its current and future values, visions, core competencies and performances (Greaver II, 1999).

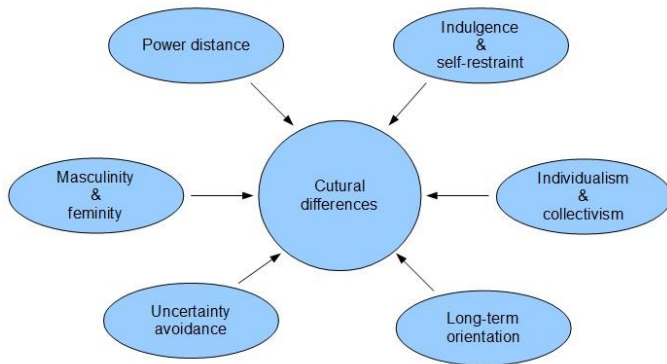
As a matter of fact, many organizations have started to outsource their IT services and software engineering to external IT suppliers to gain more organizational benefits in the past few decades. According to Schniederjans et al. (2004), IT outsourcing can be defined as the process by which organizations employ outside companies or vendors to perform their internal organizational IT tasks and services. Outsourcing of software production started in 1990s and expanded very fast across the companies (Lacity et al., 2001). Payroll processing was the earliest form of outsourcing. In recent years, many companies have realized the value and importance of outsourcing. According to the Laplante et al. (2004), the business process outsourcing market had a growth up to \$382.5 billion in year 2004.

In stating the benefits IT outsourcing, Schniederjans et al. (2004) have provided some additional reasons to what Greaver II (1999) has mentioned on why organizations outsource their IT services. These advantages are technology improvement, productivity enhancement and easier management planning. However, this is not the whole story and outsourcing in IT field can be a problematic phenomenon as well. According to King (2001), only 33 percent of IT outsourcing projects results has been satisfactory. In stating challenges concerning IT outsourcing, Schniederjans et al. (2004) have referred to problems such as failure to achieve clients' needs, poor service quality, failure to meet timely goals, lack of experience of

outsourcing in general, organizational resistance to upcoming change and insufficient preparation for the new situation. Besides, managerial issues during the execution of outsourcing requiring additional attention, for example task assignment according to available resources and personal expertise, communication problem between client and vendor which can be overseas thus requires extra communication. The absence of adequate communication makes the process even more complex. Last but not least important issue is also balancing different collaborative cultures between client and vendor with different interests.

This study aims at investigating the cultural aspects of IT outsourcing to acquire a deeper understanding of related challenges. Culture can fall upon different types such as national, regional, occupational, organizational and generational (Olson and Olson, 2003). Hostede (2010) proposed six dimensions of national cultures (see Figure 1) in his book and these dimensions provide guidelines for understanding the differences between cultures.

Fig. 1. Hofstede’s Six Dimensions of National Culture



This paper has limited its focus to the national culture and serves as a guideline on how cultural differences can influence IT outsourcing projects and what challenges can emerge during the cooperation between client and vendor from different regions. Thus this study is proposed to answer the research question.

RQ: What cultural challenges can emerge during the cooperation of IT outsourcing?

II. FRAME OF REFERENCES

Karlin (2006) argued companies can readily adjust to local norms are more likely to be successful in cross-cultural business; social practices are culture-oriented and may differ in other cultures. Accepted behavior in one culture may be irritating in another. For example, asking someone's age can be no-no in western culture while it can be a way of determining social hierarchy in the eastern culture. She also discussed that only reading up on the local culture cannot be enough for staying in another country for long duration. Personal

characteristics cause different reaction while facing cross cultural challenges. For instance, a person from a community-oriented culture may have different reaction in compare with one from individualistic culture.

One of the main reasons that people might overlook the cultural differences in outsourced IT projects is the fact that the host’s culture is so familiar and sensible that companies might not realize differences while outsourcing procedure is taking place. This is what Olson and Olson (2003) defined as cultural invisibility stating that “we don’t see our own ways of doing things as conditional in the cradle.”(p.52)

Olson and Olson (2003) emphasizing the individual cultures by saying “culture helps people read the world’s signal, the meaning of symbols of artifacts, gesture, and accoutrements of others.”(p.52). This implies that the deep understanding of one another’s culture is much imperative otherwise when two different cultures agreed upon cooperation. Otherwise, misunderstandings and consequently conflicts might arise. They have also covered a number of factors that can be influenced by culture backgrounds of team members. For instance, trust among team members, both for the members who are at the same level of hierarchy and those at different levels of hierarchy. In other words, it is initially easier to trust someone who shares the same cultural values. This level of trust can even be obtained by the first impression, from a person’s clothing, gesture, etc. The matter of trust can overshadow other factors, for instance motivation among team members. It is much harder to motivate different groups that do not trust each other to work hand in hand and to cooperate. Culture itself also influences motivation directly. For instance as Olson and Olson (2004) indicated, in the United States of America, financial reward is the best motivator, whereas in France bonus time-off inspires staff better.

Additionally, Olson and Olson (2003) have remarked about hierarchy in different cultures. They argued that in one culture there is a big difference between managers and normal staff, whereas in other cultures all staff is at the same level. This consequently affects decision makings in the group. As an example, in hierarchical company the manager decides the path to go and the others follow while in cultures where all staff members are in the same level, decisions are made in meetings and on the basis of a team decision making process. Also Winkler et al. (2008) explained how hierarchical differences in culture cause conflict. For instance German team as client blamed Indian vendor for repeating statements throughout the hierarchical structure.

Besides, the level of frankness, friendliness, and social being variations among cultures can have critical influences on the outcome of an outsourcing IT project. For instance, as Olson and Olson (2003) exemplified, in the US meetings are sharp and to the point, whereas in European cultures meetings are started with some little chats. Another culture might be more reserved and shy and do not express their opinion freely.

In a discussion of global software development, Herbsleb and Moitra (2001) argued that although different cultures might be exciting and interesting for some individuals, it can also cause deep misunderstandings. They stated that “cultures differ

on many critical dimensions, such as the need for structure, attitudes toward hierarchy, communication styles, and sense of time.”(p.17)

Herbsleb and Moitra (2001) exemplified their statement by saying that simple greetings in an e-mail or different interpretation of deadlines can create awkwardness among team members. They also claimed that these cultural differences can potentially worsen communication challenges in many cases. Additionally, they suggested that lack of “corridor talk” in outsourced projects causes cultural unfamiliarity among many other challenges for those types of projects. Even for in-house projects small cultural differences still exist among team members. But they usually will not become an issue since people have informal “corridor talk” which helps them understand “essential pieces of background information that enable developers to work together efficiently”.

Krishna et al. (2004) addressed cross-cultural issues in the area of global software outsourcing. They primarily stated that “working across cultures [... in] software production is not a trouble free process.” To support this argument, several reasons have been identified by them. The tendency of different societies that embrace distinct customs at work can create certain challenges in “cross-border collaboration”. They have also mentioned that in addition to different working customs, problems can arise in the cultural adaptation of client countries. Therefore, Krishna et al. (2004) advised companies to outsource software projects when good cross-cultural awareness is feasible. Also, they went further into the discussion and mentioned that there are limits to cultural adaptation which must be recognized. Thus managing the relationship between client and vendor is a key point in success of outsourced software projects. According to their report, choosing common terminologies, system development processes, methodologies, etc. can harmonize both sides of client and vendor. Another approach that they suggested is to utilize ‘cultural bridging’ staff. This could be achieved by exchange of staff between client and vendor’s company or sending ‘bridgehead’ teams to client offices.

Krishna et al. (2004) proposed to provide pro-posting cultural training for supplier employees working in outsourcer companies. In those trainings issues such as language, cultural practices, norms and values must be covered and must be updated according to experience gained from previous and current ongoing projects. They also pointed to the fact that this training is a two-way process in which all participants must learn about the other-one's culture.

III. METHODOLOGY

The goal of this paper is to provide an in-depth insight into the subject of IT outsourcing as regards the impact caused by cultural differences during the cooperation between client and vendor. Since culture is a human-oriented concept and involves all kinds of individual behaviors, it is hard to evaluate and quantify the impact it might have on IT outsourcing activities.

Therefore, this paper applied qualitative research approach (Creswell, 2009) to address the research question, specifically to understand what problems cultural differences have caused in the cooperation of IT outsourcing projects and why these problems occurred in reality. The following content of this section will introduce the research process, including data collection and data analysis techniques.

Many scholars have done research in the area of offshore outsourcing (Herbsleb and Moitra, 2001, Schniederjans et al., 2004), as well as cultural impacts (Matloff, 2005, Winkler et al., 2008). Theories and propositions have been generated based on both empirical and theoretical practice for years. Therefore, the richness of related research gives the opportunity to carry out a study on this subject through a literature review. Furthermore, it is necessary and wise to utilize established knowledge and even controversial propositions to examine the same subject from a different aspect of view. This paper is conducted by cross-examining earlier studies in related areas, including outsourcing, cultural differences and IT. In order to address the research question, this research adopted grounded theory to process various literatures regarding cultural impact on the cooperation of IT outsourcing. The reason of applying grounded theory is that findings from earlier studies and research can be compared and complemented amongst and with each other and as a result, and as a result, a novel and constructive discovery might be expectable.

This research is proposed from the constructive view (Creswell, 2009) to examine a central phenomenon - cultural challenges of IT outsourcing between the client and its vendor and to identify the causes of such phenomenon through rigorous data collection. The research started with data collection by reviewing previous studies, such as articles and journals. Literature review was applied, firstly, to acquire a thorough understanding on the studying subject; and secondly, to abstract relevant data for a further process. Data in this research are all second hand data which are abstracted from selected literature.

There are a lot of research regarding IT outsourcing and cross-cultural cooperation. The major concepts for searching bias came from the research question of this paper. Keywords used in search process are basic elements of the two major concepts “Outsourcing” and “Culture”. This research has gained the benefit of using secondary data, i.e. previous literature and studies, with the aid of using the following electronic databases:

- IEEExplore
- ACM
- SpringerLink
- Science Direct

Table I shows detailed information about data source and search strategy.

DATA SOURCES

Keywords: Outsourcing, culture						
Search Engine		Total Results	Title Review	Abstract Review	Full Review	Selected
IEEE Xplore	Journal	9	7	17	12	8
	Conference	55	15			
ACM		602	28	15	7	4
SpringerLink		198	15	11	6	3
Science Direct		135	17	7	3	2

The selection process started by searching the keywords (“outsourcing” AND “Culture”). The second step was refining the search using advance search utility. During this step the results were restricted to those articles were written in English language and related to three fields: computer science, Information technology and Information system. Also in this step we excluded studies that were part of a book. By using these search methods we found a massive amount of the articles listed in databases. Afterwards selection process was continued by reading the articles title and then abstract review to find the degree of relevancy is high enough for a deeper investigation. We included:

- Studies that describe theoretical concepts on IT outsourcing

- Studies that describe cultural challenges on IT outsourcing

The remaining articles were fully reviewed by researchers. During the literature review phase, essential data related to research question are extracted and well documented for a further process.

Due to the nature of grounded theory, additional data was required during the data analysis phase, such as in progresses of theoretical sampling and theory verification (Charmaz, 2006). When the requirement of new data emerged which, in this case, was the time to perform a theoretical sampling, it invoked literature review and repeated the activities described in above section for data selection. The only difference was that the search key words were targeting the literature that could fill in the missing concepts. More details about theoretical sampling will be introduced in the next paragraph. Moreover, proceeding grounded theory in this research also involved activities of data collection, such as open sampling and memoing (Charmaz, 2006), which examined certain concepts in a broad and overall aspect and then documented specific data in regards of those concepts.

According to the previous claim, this research has applied grounded theory as the research method. In a qualitative research, data analysis consists of preparing data and inducting them into relevant themes through a series of processes (Creswell, 2009). The procedures of data analysis for the research are listed in table II where the first column indicates the sequence of actions, the second column presents the process applied according to the guideline of grounded theory (Charmaz, 2006), and the third column shows the specific actions that have been performed in this study.

DATA ANALYSIS PROCEDURE

Step	Process	Action in practice
1	Open coding	Related literature was selected, and concepts were extracted from them; data was conceptualized from a broad field and written down in notes.
2	Memoing	Relevant findings in literature and thoughts inspired by discussions were recorded. This process went through the entire research, it helped researcher collect, refine and track ideas emerged during the research.
3	Revising codes	Codes were modified by comparing them with new data. Some concepts were found to be contrary to each other or insufficient to produce valid codes. In this process, the codes became more accurate and valid to address the research question by adding more data to verify and supplement the coded concepts.
4	Classifying concepts	Similarity and diversity among all the concepts were discovered and then classified into different themes by this process.

5	Forming categories	Similar or related concepts from memos were gathered to form one category. Repeated this process on other concepts till there were no more categories need to be formed. And then labeled each category according to the theme those concepts belonged to.
6	Revising categories	Categories were merged, modified and discarded by adopting more data. While extending the content in each category, some categories turned out belong to the same domain and thus they were merged into a new category; some categories were found not accurate referring to the concepts they contained and thus needed to be changed; some categories were discarded because of lack of sufficient data to provide a solid argument.
7	Identifying properties	Properties of each category have been identified by inspecting the concepts it contains. Each property was a reflection of the category itself and presents a causal sequence in a particular perspective.
8	Elaborating categories	Causal sequences within each category have been explored in this process. Thereby, the causes and consequences of the challenges were identified.
9	Clarifying concepts	The validity of the concepts were checked by applying them on new data, therefore, some concept were modified or removed accordingly in this process.
10	Finding lacuna	Concepts in each category were examined closely in order to find potential deficiency in capturing all their aspects. This process was the primary action to reach a saturation of research findings.
11	Theoretical sampling	The lacunas in the categories indicated there was a need to collect relevant data to fill in the missing concepts. Therefore, literature in certain areas were selected and analyzed in this process.
12	Reaching saturation	Steps 1 to 10 were iterated by applying new data till no more concepts could be added into each category. To reach saturation, such iteration was performed multiple times according to each discovery of missing concept.

IV. FINDINGS

Seventeen articles have been studied and analyzed to examine the impact of cultural challenges on IT outsourcing practice to answer the research question raised at the beginning of this paper. The findings of this research are presented in two subsections. The first subsection is “Synthesis” where explicating what kind of challenges can emerge in different domains and what practical management strategies have been applied to address them in reality. The second subsection is “Results” where answering the research question with all the challenges identified in this study and proposing recommended solution to address these challenges.

A. Synthesis

After comparing all concepts promoted by scholars in regards to the research question, three major domains related to challenges of cultural differences were identified. These domains have been transformed into three categories by gathering related concepts and they are terms as: perception, relationship and communication. Each of them

contains its own properties that have causal sequences with different aspects of cultural differences on IT outsourcing. Some domains are not transformed into categories due to lack of data to give a thorough assessment, but they are highly relevant to the research question and thus worth being introduced in this paper (see the following section *Other*).

Perception

People from different cultures have different perceptions in many aspects. The variant perception between client and vendor can have negative impacts to their cooperation. A reasonable behavior in one culture, for example giving a suggestion, can be considered inappropriate in another culture (Wareham et al., 2007). Such phenomenon hinders the success of IT outsourcing projects. Different understanding of quality in a cross-cultural cooperation may lead to a disappointment on the final result by the client (Winkler et al., 2008). In this case, a highly valued service from the view of the vendor may be considered valueless from the view of the client. For example, the vendor delivered usable software to the client, but the client was expecting more than the basic functionality such as reusability of the source code and a well written document. Development teams and individuals from different cultures

usually apply different development approaches (Kankanhalli et al., 2004, Olson and Olson, 2003, Winkler et al., 2008), such as programming styles, decision making and tasks distribution. It can be very difficult to decide a mutual process or to alter from one approach to another one when the coordination involves interaction among multiple cultures (Kusmaull et al., 2004). Effective activities in one culture may not be appreciated in another one, for example an open meeting involving the entire development team or a direct communication to the related personnel without going through the higher authority. Nicholson and Sahay (2001) described a clash when two collaborative teams that possessed different views on software development process were trying to synchronize their approach according to the preference of one team. These differences in perceiving cultural values may hold back the IT outsourcing cooperation and result in an unsatisfied team or individual performance.

The recognition of distinct perception caused by cultural differences is the key to succeed the cooperation of IT outsourcing (Wareham et al., 2007). Remaining sensitive to cultural differences helps co-workers from different regions understand each other better and avoid unnecessary conflicts (Kusmaull et al., 2004). When having different standards on understanding the same subject, it is difficult for the vendor to meet the client's requirement, and also is it difficult for the client to make the vendor realize what their needs are. Therefore, synchronizing their perception can alleviate the impact caused by cultural differences. Educational training will help programmers become more adaptable and prepared for the global software development, in which case the perception of values and quality can be synchronized or merged (Herbsleb and Moitra, 2001).

Communication

The style of communication varies with the diversity of cultural contexts and needs to be adjusted accordingly while the outsourcing relationships evolve through time (Wareham et al., 2007). The communication in abstractive cultures is more explicit and the information it carries is more relevant comparing to the communication in associative cultures (Triandis 1982). In high context cultures the communication of information is direct and without any hidden meaning while in low context cultures it usually contains embedded meanings (Winkler et al., 2008). It may lead to misunderstandings when different styles of communication are existed in the cooperation of IT outsourcing projects (Winkler et al., 2008). Other factors can also cause misunderstandings. In high power distance culture, some behaviors can cause misunderstandings and set back the efficiency of the communication between two individuals or team collaboration (Nicholson and Sahay, 2001, Winkler et al., 2008, Holmstrom et al., 2008). For example, the tendency of saying "yes" to superiors and repeating statements of superiors among Indian IT staff. On the other hand, some behaviors are considered rude and disrespectful and thus jeopardize the communication channel. For example, distribute a message without going through higher authority in Asian cultures. In mixed-cultural collaboration, the convention of

observing hierarchy may delay the distribution of the intelligence (Olson and Olson, 2003) or completely block the communication (Matloff, 2005).

The preference of the way people communicate with each other varies from culture to culture (Olson and Olson, 2003, Wareham et al., 2007). A healthy communication channel between client and vendor is vital for the success of their cooperation. Using suitable technologies can avoid the impact caused by high degree of hierarchy (Olson and Olson, 2003). Winkler et al. (2008) suggested following actions to improve the communication between client and vendor: adapting to the client's culture or adapting to the vendor's culture; learning counterparty's cultural traits and behaviors and frequent interaction and communication with foreign team members.

Relationship

The quality of the relationship between client and vendor is reflected through two major attributes: trust and conflict. Agile style development has been approved to be effective to build confidence and develop trust among people who have no collaborative experience (Kusmaull et al., 2004). Speaking of developing trust in a general aspect, Doney et al. (1998) pointed out that people possessing different cultural dimensions develop their trust with others through different paths. In IT industry, the unfamiliar cultural surroundings will increase the difficulty to develop trust, especially for a new member to fit in a team which is built upon relationships (Olson and Olson, 2003). Holmster et al. (2008) have confirmed the importance of trust in a relationship in their study from both project managers and software developers they interviewed with. Different bias of hierarchical structure between clients and vendors can lead to conflicts (Winkler et al., 2008). For example, being open and honest, or a straight criticism, is considered as being rude in some cultures (Olson and Olson, 2003). Inappropriate behaviors in certain cultural contexts can damage the relationships between client and vendor by causing conflicts and decreasing their trust on each side (Winkler et al., 2008).

Active management, strong leadership and using common processes can facilitate the relationships in outsourcing cooperation (Winkler et al., 2008, Heeks et al., 2001, Krishna et al., 2004). It is important to help team members learn their co-workers' abilities and traits so they can develop trust with each other (Olson and Olson, 2003). Active management of problematic issues caused by cultural differences can help programmers and development teams improve their performance, harmonize cooperation, develop trust and reduces conflicts but it also requires dedicated managers to get personally involved (Winkler et al., 2008). When leading a team with a distinct cultural background, it is rewardful to position someone who is familiar with that culture as a manager or coordinator to handle daily issues (Wareham et al., 2007). Culture learning (Krishna et al., 2004, Holmster et al., 2008) and negotiated culture perspective (Brannen and Salk, 2000) are recommended strategies of smoothing the relationship in a mixed-cultural collaboration.

Other

The hierarchy of a culture determines whether an individual or a team will be actively or passively engaged with the given errand (Olson and Olson, 2003) and it may reduce working efficiency (Matloff, 2005). A passive attitude can lower the performance in many ways (Winkler et al., 2008) such as lack of adequate communication, misunderstanding with team members, hesitation of proposing creative solutions, etc. In a case study conducted by Ma et al. (2007) it was found that the Chinese vendors were less efficient when they worked in normal hours than in extra hours. Nicholson and Sahay (2001) also observed a similar fact in their study that Indian developers were willing to work overtime to complete their tasks. Such phenomenon might associate with their cultural encouragement of overtime work which could cause a lower performance in the early and middle stages of their development since people were expecting to complete their tasks on extra hours. Earley (1993) claimed that collectivists perform better when they work within a group where they can feel that they belongingness and identify themselves. On the other hand, the performance of collectivists reduces when they work alone or when they are not recognized as a member of the team. In contrast, individualists perform better when they work alone. The different interpretation of designer values may affect the team performance (Winkler et al., 2008). For example, a poor documentation can reduce the efficiency of the collaborative performance in a global software development (Herbsleb and Moitra, 2001). Additionally, a culture-limited education can restrain future IT developers' creativity which is

a valuable attribute to enhance personal and team performance (Matloff, 2005).

Providing detailed documentation that guides vendor through the development process and strong leadership for the development team could secure and improve the performance of the cooperation crossing different cultures (Winkler et al., 2008). Effective communication and interaction are important for spreading collaboration across multiple cultures, especially in the early stage of the project (Kusmaull et al., 2004). People from different cultures should be motivated and managed accordingly to obtain better performance (Olson and Olson, 2003, Triandis, 1982).

B. Results

As stated earlier, this paper is a comparative analysis of previous studies about cross-cultural impacts on IT outsourcing cooperation which has been discussed by a member of authors and scholars. From the analysis of the stated studies, the following results have been obtained:

Cultural differences have impacts on IT outsourcing cooperation in three major categories: perception, relationship and communication. These categories are found to be the key domains that require attention from both sides of client and vendor. The result of an IT outsourcing project depends on how the challenges in each of these categories are addressed. Challenges in each category have been captured and analyzed. The causal sequences of those challenges have also been revealed. By knowing what causes lead to what consequences, constructive suggestions are raised within each category to address the challenges (See table III).

CULTURAL CHALLENGES AND COPING STRATEGIES IN PRACTICE

Category	Challenge	Coping strategy
Perception	To correctly interpret the behavior of people interacting and socializing with each other.	Be aware of and sensitive to the distinct perception cause by cultural difference so as to reduce or eliminate the negative influence caused by unfamiliar behavior and procedures in daily interaction; use culture mediator to help both client and vendor get familiar with the differences in perceiving things; prepare employees for the cross-cultural development and cooperation with culture training and learning programs.
	To understand the origins behind unfamiliar behaviors, or why people behave in certain ways, or what cultural background causes such behavior.	
	To have a coherent quality standard on essential matters, such as the quality of documentation and source codes along with the final product.	
	To reach a mutual recognition on the development methodology this includes development approaches and methods.	

Communication	To adjust communication style timely to avoid incompatible approaches.	Get familiar with the counterparty's way of communication to avoid misunderstanding and conflicts; use suitable technologies for communication to increase the efficiency; adapt and learn the counterparty's culture to synchronize different aspects of communication; frequently interact with people from different cultures to find proper ways of communicating with each other.
	To deliver explicit and accurate information to increase communication efficiency.	
	To correctly interpret receiving information to avoid misunderstanding and its aftermaths	
	To avoid communication delay and interrupt caused by hierarchical structure and conflicts between correspondents.	
Relationship	To avoid conflict that can compromise relationships in outsourcing practice.	Provide active management and strong leadership to deal with problematic issue in the daily works; use common procedures that both client and vendor sides are familiar with to diminish conflicts; learn co-worker's trait and ability to avoid conflict and to develop trust; adopt agile style development to gain trust from client by frequently delivering work progress.
	To develop trust that can advance relationships in outsourcing practice.	
Other	To alleviate the negative impacts caused by hierarchy.	Provide detailed documents and explicit plans to vendor to avoid potential confusion during the outsourcing cooperation; maintain an effective and healthy communication channel to increase the performance of individuals and teams; use proper strategies to motivate and manage people with different cultural background; alter unhealthy culture for the sustainable development and satisfactory cooperation.
	To promote team and individual performance.	
	To overcome embedded restraint on people to make them more adaptable.	
	To alter unhealthy cultural traditions such as working overtime.	

V. DISCUSSION

A. Interconnection between Categories

Challenges are not only represented as causation in each category, they are also can be found between categories which are congeries of related causal chains of multiple incidents. Therefore, a disturbance within one category can have a chain reaction on an incident within another category through the interconnection (known as a terminology in grounded theory) between these two categories. For example, a conflict can wreck the relationship between the client and its vendor and thus the unhealthy relationship may cause a temporary communication shutdown. It can be challenging to prevent negative impacts from different categories. Fig. 2 shows the interconnection between categories.

Perception → Relationship

Different perception on certain issues can compromise the relationship between client and vendor, particularly between individuals or development teams. There were two primary causes of such consequence have been identified. One cause is to collaborate in IT outsourcing project without consonant understanding of values and beliefs which decreases the trust of client on its vendor. Winkler et al. (2008) recorded a case that Indian programmers thought they had delivered product with good quality but their German client were not satisfied. Such incident can reduce client's confidence and trust in the capability and competency of the vendor. Another cause is to misinterpret the physical behavior and literal expression during the interaction among people with different cultural perception. The unfamiliar behavior and expression brings difficulties for people to develop trust and establish collaborative relationship within a team or organization. Improper response to a foreigner culture can even damage the relationships in outsourcing cooperation. For example, when saying "no" is considered as an inappropriate response by the vendor and the client counts

on the vendor's positive answer, the disappointment of eventually knowing the vendor's incapacity of achieving the request will decrease the trust to the relationship (Holmstrom et al., 2006, Winkler et al., 2008). Therefore, when teams or individuals from different cultures engage in their collaboration, the different perception in certain matters can affect the cooperation relationships between client and vendor.

Communication → Relationship

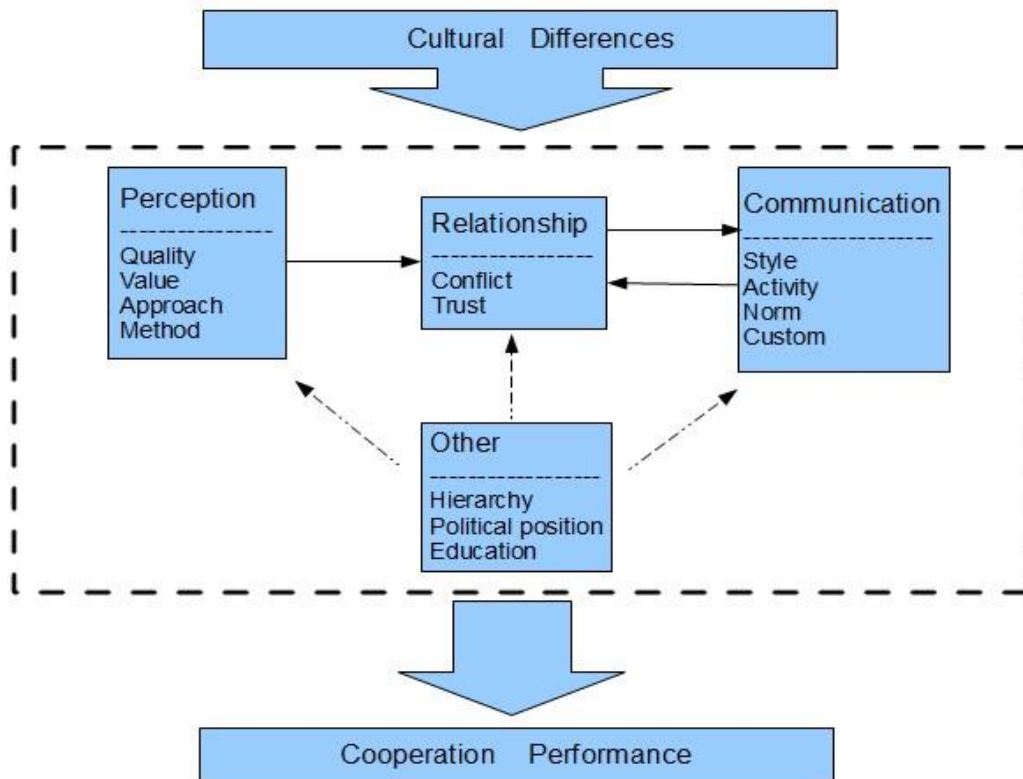
When the communication goes wrong during the cooperation, the relationship between client and vendor or two individuals with different cultural background can become problematic. The major cause of such consequence is to use improper communication approaches in a mixed-cultural cooperation, especially in the case of initializing a communication without knowing the traits, customs or cultural context of the counterparty. Norms and rules regarding to certain cultures sometimes are embedded in the way people interact with each other. Overlooking such custom and convention may be considered rude or disrespectful to certain individuals or authorities and thus jeopardize the relationship among correlated people with unexpected conflicts and clash. Krishna et al. (2004) gave an example of altering communication style to maintain a constructive relationship in

IT outsourcing collaboration where the British managers had to adopt indirect opinion to assess their Indian vendor's performance. Even daily interaction at work place, such as the way people dress and talk, could affect collaborative teams in recognizing their relationships (Nicholson and Sahay, 2001).

Relationship → Communication

A deteriorated relationship between client and vendor or two individuals can jam the communication channel or even block it completely. The causes of such consequence are mostly because of conflicts and the lack of trust during the cooperation. A healthy and constructive relationship is the precondition for holding an effective and efficient communication channel. However, as mentioned in the section Relationship, the relationships in IT outsourcing can be hindered by cultural differences regarding various matters which usually involve conflicts and losing trust among people. Winkler et al. (2008) retained a conflict between German team members and their Indian colleagues which not only collapsed the relationship but also caused a temporary communication interruption between cultures. When such negative incident emerged in the outsourcing cooperation, the frequency of interaction between correlated individuals may be significantly decreased.

Fig. 2. Interconnection between Categories



In addition, the frame “Other” in Fig. 2 might hold categories that have interconnection with three categories identified in this research as well. However, as mentioned in section *Synthesis*, it requires additional studies and data to reveal the potential possibility.

B. Threat to validity

Construct validity

In this study, part of data collection and most of data analysis were conducted under the guideline of grounded theory. As a feature of grounded theory approach, constantly supplementing and verifying the proposal generated from previous study with new data is the key to validate the research findings. The validity of research findings depend on how many times such iterative process can proceed and how much data can be applied. However, due to the limited time and workforce in this research, it was impossible to reach the ideal amounts of such iterative process. Therefore, there might be a treat to the findings’ validity; and adjustment or correction might be needed when repeating this process with additional data.

Internal validity

This research involves a lot of activities of transcribing literature, such as keeping notes, memos and documenting ideas, and conceptualizing relevant theories and incidents proposed by other scholars. Any mistake in transcription or conceptualization process, for example omitting or misinterpreting data, may become an internal threat to the validity of the findings.

External validity

All the data used in this research were collected from related literature, which means they are second hand data. The certainty and authenticity of these data varies from one another in many aspects, for example some data were collected from interviews and some were collected by observation. Any potential miscalculation in processing first hand data in those literature is an external validity of this research, although such treat has been lessened by cross-examining multiple literature in terms of each particular subject.

VI. CONCLUSION AND FUTURE WORK

With a focus of cultural impact, outsourcing challenges in IT industry have been studied and collected through related literature. During this process, three major categories have been promoted in this paper and they are perception, relationship and communication. These categories represent different domains of IT outsourcing challenges that associated with cultural differences directly and enable the possibility to examine those challenges from a macro perspective. Cultural challenges on IT outsourcing have been classified and the causal sequences among these challenges have also been revealed. To address

these challenges, coping strategies have been recommended in this paper.

However, there are works need to be done in the future.

- Apply new data to supplement, verify and modify the findings in this paper.
- Provide specific management strategy to address each kind of challenge instead of giving general suggestions.

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REFERENCES

- BRANNEN, M. Y. & SALK, J. E. 2000. Partnering across borders: Negotiating organizational culture in a German-Japanese joint venture. *Human Relations*, 53, 451-487.
- CHARMAZ, K. 2006. *Constructing grounded theory: a practical guide through qualitative analysis*.
- CRESWELL, J. W. 2009. *Research Design Qualitative, Quantitative, and Mixed Methods Approaches* SAGE Publications, Inc
- DONEY, P. M., CANNON, J. P. & MULLEN, M. R. 1998. Understanding the influence of national culture on the development of trust. *Academy of Management Review*, 23, 601-620.
- EARLEY, P. C. 1993. East Meets West Meets Mideast - Further Explorations of Collectivistic and Individualistic Work Groups. *Academy of Management Journal*, 36, 319-348.
- EMBLETON, P. R. & WRIGHT, P. C. 1998. A practical guide to successful outsourcing. *Empowerment in Organizations*, 6, 94-106.
- GREAVER II, M. F. 1999. *Strategic Outsourcing: A Structured Approach to Outsourcing Decisions and Initiatives*, New York, AMACOM.
- HEEKES, R., KRISHNA, S., NICHOLSON, B. & SAHAY, S. 2001. Synching or sinking: Global software outsourcing relationships. *Ieee Software*, 18, 54-60.
- HERBSLEB, J. D. & MOITRA, D. 2001. Global software development. *Ieee Software*, 18, 16-20.
- HOFSTEDE, G. H., HOFSTEDE, G. J. & MINKOV, M. 2010. *Cultures and organizations : software of the mind : intercultural cooperation and its importance for survival*, New York, McGraw-Hill.
- HOLMSTROM, H., M., CONCHUIR, E. O., AGERFALK, P.J. & FITZGERALD, B. 2008. Two-Stage offshoring: an investigation of the irish bridge. *MIS Q.*, 32, 257-279.
- HOLMSTROM, H., CONCHUIR, E. O., AGERFALK, P. J. & FITZGERALD, B. 2006. Global software development challenges: A case study on temporal, geographical and socio-cultural distance. *2006 IEEE International Conference on Global Software Engineering, Proceedings*, 3-11.
- KANKANHALLI, A., TAN, B. C. Y., WEI, K. K. & HOLMES, M. C. 2004. Cross-cultural differences and information

- systems developer values. *Decision Support Systems*, 38, 183-195.
- KARLIN, S. 2006. Shaman, bless this lab - How to cross the cultural divide when working overseas. *Ieee Spectrum*, 43, 49-+.
- KING, W. R. 2001. Developing a sourcing strategy for IS: a behavioral decision process and framework. *Engineering Management, IEEE Transactions on*, 15-24.
- KOBAYASHI-HILLARY, M. 2005. A Passage to India. *Queue*, 3, 54-60.
- KRISHNA, S., SAHAY, S. & WALSHAM, G. 2004. Managing cross-cultural issues in global software outsourcing. *Commun. ACM*, 47, 62-66.
- KUSSMAULL, C., JACK, R. & SPONSLER, B. 2004. Outsourcing and offshoring with agility: A case study. *Extreme Programming and Agile Methods - Xp/ Agile Universe 2004, Proceedings*, 3134, 147-154.
- LACITY, M. C., WILLCOCKS, L. P. & WILLCOCKS, L. 2001. *Global information technology outsourcing; in search of business advantage*, John Wiley & Sons
- LAPLANTE, P. A., COSTELLO, T., PAWAN, S., BINDIGANAVILE, S. & LANDON, M. 2004. The who, what, why, where, and when of IT outsourcing. *IT Professional*, 6, 19 - 23.
- MA, J. Q., LI, J. Y., CHEN, W. B., CONRADI, R., JI, J. Z. & LIU, C. N. 2007. An industrial survey of software outsourcing in China. *Product-Focused Software Process Improvement, Proceedings*, 4589, 5-19.
- MATLOFF, N. 2005. Offshoring: what can go wrong? . *IT Professional*, 7, 39-45.
- NICHOLSON, B. & SAHAY, S. 2001. Some political and cultural issues in the globalisation of software development: case experience from Britain and India. *Information and Organization*, 11, 25-43.
- OLSON, J. S. & OLSON, G. M. 2003. Culture Surprises in Remote Software Development Teams. *Queue*, 1, 52-59.
- POWER, M., BONIFAZI, C. & DESOUZA, K. 2004. The ten outsourcing traps to avoid. *Journal of Business Strategy*, 37 - 42.
- SCHNIEDERJANS, M., HAMAKER, J. & SCHNIEDERJANS, A. 2004. *Information technology investment: decision-making methodology*, SGP World Scientific.
- TRIANDIS, H. C. 1982. Cultures Consequences - International Differences in Work-Related Values - Hofstede, G. *Human Organization*, 41, 86-90.
- WAREHAM, J., MAHNKE, V., PETERS, S. & BIORN-ANDERSEN, N. 2007. Communication metaphors-in-use: Technical communication and offshore systems development. *Ieee Transactions on Professional Communication*, 50, 93-108.
- WINKLER, J. K., DIBBERN, J. & HEINZL, A. 2008. The impact of cultural differences in offshore outsourcing - Case study results from German-Indian application development projects. *Information Systems Frontiers*, 10, 243-258.