

SELECTING PARTNERS FOR COLLABORATIVE NETWORKS

Mixed Methods Approach

Noor Azliza Che Mat, Yen Cheung
Monash University, Victoria, Australia

Helana Scheepers
Swinburne University of Technology, Victoria, Australia

Keywords: Partner selection criteria, Collaborative projects, Mixed methods.

Abstract: Due to an increasingly uncertainty in the business environment, there is a need for organisations to collaborate in order to compete. However, due to time limitation in selecting partners for collaboration particularly new partners, there is a need to identify critical factors in finding the right partners. To explore the criteria for partner selection, mixed research methods approach was employed by conducting an online survey followed by a case study approach. The online survey was conducted with eighty-nine organisations that have experience in collaborative projects. ANOVA tests were performed on the survey data followed by an exploratory analysis. The major findings showed that out of sixteen partners selection criteria, only seven were critically important in selecting partners. These were then divided into two dimensions: dependability and experience. Later, the case study research methodology was carried out and conducted as further analysis of the online survey findings.

1 INTRODUCTION

The new wave of global mergers as well as the widespread establishment of global networks has created a new phenomenon in conducting a business where collaboration is a primary requirement. Business nowadays is no longer about competition at all costs but that organisations are being pushed to work to collaborate with other organisations to gain competitive advantage. Sustaining business growth in the age of globalisation where it is being conducted across national boundaries seems harder to maintain without collaboration.

Selecting partners for collaborative project requires proper planning and a number of criteria should be considered carefully to ensure that the end-result of collaboration creates satisfaction from all parties involved and achieves the expected outcomes. The partner selection process is time consuming and a long list of criteria was shown and given in previous research, organisations might miss out on fruitful opportunities in the market if no immediate action is taken. Furthermore, the high percentage of collaboration projects that failed to achieve objectives was due to the incompatibility of

the partners (Dacin and Hitt, 1997). Therefore, finding partners for organisations regardless the size of organisations, types of business activities and location is critical to help organisations select partners who have compatible goals, required skills and complementary strategic orientation. The choice is key to pursuing fruitful market-opportunity (Dacin and Hitt, 1997).

Therefore, the main goals and motivation of this paper are to investigate the following research questions: what are the dimensions that form criteria for selecting partners and what are the elements of those dimensions?

The remainder of the paper is set out as follow: Section 2 and 3 describe a background of collaboration, the partner selection criteria respectively; followed by Section 4 which gives the description quantitative and qualitative research methods. Section 6 shows the characteristics of the sample and also provides empirical findings from the survey conducted. It also presents two case studies. Section 7 discusses the findings and finally, Section 8 concludes with contributions, limitations and suggestions for further work.

2 COLLABORATION

In the academic literature the term, “collaboration” itself does not present as a single term (Fyall and Garrod, 2005). The terms, ‘collaboration’ and ‘cooperation’ are used interchangeably. Adding to the confusion, other words such as ‘partnerships’, ‘alliances’, ‘joint ventures’ and ‘consortia’ are also applied as common or general term in most research papers.

The use of the terminologies became obvious when other terms such as networking, communication and coordination are also considered and related to each other (Himmelman, 1996). The following discussion in this article focuses on those concepts. Other researchers have studied differences among the terminologies of coordination, cooperation and collaboration.

Himmelman (1996) shows a progressive increase in the complexity of the relationship from coordination to collaboration. Organisations that coordinate typically share information, whereas cooperating organisations share information as well as physical space and transportation resources. Organisations that collaborate share information, physical space, transportation resources and further invest in the training of staff.

Camarinha-Matos and Hamideh (2006) proposed an interaction level of maturity levels of networking, cooperation, coordination and collaboration. As the relationship progresses from the lowest to the highest level, the amount of integration increases and people are working together and sharing their responsibilities. Therefore, collaboration is an emerging and long process that requires the highest level of maturity as well as integration.

The proliferation of the information and communication technology (ICT) development with low cost computing have given a tremendous influence on how business operation is conducted by allowing organisations to be connected virtually regardless of the geographical location or known as collaborative networks. Collaborative networks (CN) are defined as groups of businesses, individuals and other organisational entities that work together by combining their capabilities and resources to achieve targeted outcomes (Shuman and Twombly, 2008).

3 PARTNER SELECTION

One of the main prerequisites to get those advantages that need to be considered carefully

before becoming involved in collaborative projects is selecting the right partners to work together (Killing, 1983; Dong and Glaister, 2006). This is because selecting the right partners, who have compatible goals, appropriate skills and effective motivation, has been recognised as crucial for successful collaboration (Dacin and Hitt, 1997). The chosen partners for collaborative projects might affect the overall mixture of available skills and resources as well as the operating policies and procedures (Geringer, 1991).

However, according to Wildeman (1998) the poor success rate of collaboration showed that 60-70% of collaboration disbanded prematurely due to certain factors such as lack of management skills. Organisations should identify selection criteria that should be employed prior to the setting up of collaboration projects. Furthermore, the process of setting up collaborative projects is time consuming and costly. However, many organisations select their partners in an ad-hoc manner

While it seems that an almost unlimited range of criteria exists in selecting partners, Geringer (1991) simplified by distinguishing broad categories of criteria. These two categories are called ‘task-related’ and ‘partner-related’ criteria respectively. The typology provides better understanding of the selection process and how they proceed in selecting partners (Tatoglu, 2000).

Little prior research has specifically focused on the partner-related criteria and therefore, the focus of this paper is on partner-related criteria as it has great impact on organisations and business performances (Kannan and Tan, 2002). Furthermore, partner-related criteria can be critical criteria as they can influence the efficiency and effectiveness of corporation between partners (Thomlinson, 1970). The consideration of those criteria during the selection stage is also vital to make relationship management easier and the chances of the possibility of successful collaboration are higher (Abramov et al., 1997). The identified list of criteria for selecting partners was based on a comprehensive and thorough literature review from forty-one established journals (Mat et al., 2008).

4 RESEARCH METHODS

The quantitative research approach has dominated the late 19th century until the mid-20th century (Creswell, 2009). It is a means of systematic scientific investigation of exploring the relationship among variables using statistical procedures or mathematical expression. The format of questions is

closed-ended information and it is used to confirm a hypothesis about phenomenon.

In the next half of the 20th century, the qualitative research received a great attention and a number of journals have been growing and became an important type of research in the fields of management, psychology, communications or information studies.

Along with the emergence of qualitative research, the mixed methods research was created by combining both quantitative and qualitative research (Creswell, 2009). The strategies of inquiry that are related to mixed method are multi-methods, convergence, integrated and combined (Creswell, 2009). The mixed methods is accepted as the third major research approach or research paradigm besides qualitative and quantitative.

According to Creswell (2009), mixed methods research is a research design or an approach to inquiry that collects and analyses data that integrates between qualitative and quantitative data in a study or series of studies. The use of both approaches help to strengthen the overall study in terms of understanding the research problems better than merely focusing on qualitative or quantitative research (Creswell and Clark, 2007). Furthermore, it helps in reflecting the research questions better compared to a single qualitative or quantitative (Newman et al., 2003). The mixed methods research approach is accepted as the third major research paradigm besides qualitative and quantitative research (Johnson et al., 2007).

5 DATA ANALYSIS METHOD

Data analysis can be divided into two groups according to online survey and case study methods.

5.1 Online Survey

An online survey was employed to explore the criteria for selecting partners. The survey was distributed to targeted organisations. Invitation e-mails were sent to top management personnel in the organisations who have sufficient knowledge and experience to participate in the survey.

The survey instrument was divided into two main sections. The first section contains questions on demographic characteristics of organisations such as location, number of employees, period of organisations involved in a business. In the second section is the investigations of the criteria for selecting partners were listed. Each item for the criteria list and the perceived benefits were

measured on a five-point interval scale where 5 means 'Strongly Agree' and 1 is 'Strongly Disagree'.

Initially, the survey was evaluated by selected domains in line with the recommendations given by Kitchenham and Pfleeger (2002). The survey was returned with minor corrections and later a pilot test of the survey was conducted with five postgraduate students who had experience in the subject matter.

The revised version of the survey was distributed via an embedded hyperlink in an introduction e-mail to 326 organisations in mid November 2008 and a total of eighty-six usable responses were returned with a response rate of 26.3%.

5.2 Case Study

The finding of the online surveys was generated by using complex quantitative methods. However, due to the limitation of the questions in online survey with close-ended format, case studies were conducted with the purpose to perform further identification and investigation of the results of the previous survey. The case study methodology is a relevant technique for an in-depth analysis in answering particular reasons of the findings (Benbasat et al. 1987; Galliers, 1991).

In this research, the face-to-face interview and phone interview sessions were conducted with two selected organisations from Malaysia and each interview took 1 hour. Interviews play important roles in case studies to provide rich information about a particular situation (Benbasat et al., 1987; Yin, 2009). The interview question contains open-ended questions about the criteria which are derived from the online survey findings.

The organisations were asked to give their opinions and expectations of their understanding of the criteria and the reasons of the importance of those criteria. The interviews sessions were recorded using audiotapes as these medium certainly are better means to provide a more accurate interpretation of the interviews than any other method (Yin, 2009).

Pseudonyms Company ABC and Company XYZ for the two case organisations were chosen in this study to provide anonymity to the participants.

Case 1 [Company ABC]

Has been established since 1974 in Malaysia with annual net sales estimated at US\$30.1 billion and has been well-known as a global communication leader for many years ago. Unit Home and Network in company ABC is responsible for fulfilling customer's demands in rich mobile commerce and in-home entertainment. The main job in this unit is

designing, manufacturing, installing, and servicing digital and Internet Protocol (IP) video and broadcast network interactive set-tops. To fulfil market demands of their products, organisation ABC needs to collaborate with various partners to develop the integrated chips.

Case 2 [Company XYZ]

Has been established since July 1998 to develop a world class integrated petrochemical. Due to the lack of technological expertise and experience in developing high technology, the company needs to collaborate with one overseas company. The review process of selecting the best partner required a thorough step as the investment of the collaboration project is estimated at more than \$10 million.

6 RESULTS

6.1 Online Survey – Statistical Finding

As the criteria for selecting partners were measured using various items, reliability tests were conducted to measure the degree to which items that make up the scale are measuring the same underlying attributes. This could be measured using Cronbach alpha (Nunnally, 1978) and in this case, the Cronbach alpha for all variables is above 0.7 which is good and acceptable. Then, an exploratory factor analysis test was employed to address the validity of these variables as shown in Table 1.

Table 1: Factor loading of partner selection criteria

Factor	Item	*FL	*Rel
Dependability value	The partners showed integrity (performed task with honesty)	.875	.811
	The partner(s) can be trusted to act in the best interest of the partnership	.842	
	The partner(s) showed commitment (dedicated in performing tasks)	.805	
	The partner(s) had knowledge of the local market we want to target	.556	
	The partner(s) shared their expertise/skill with us	.475	
Experience value	The partner(s) had the ability to negotiate with local government where we wanted to do business	.826	.711
	The partner(s) had project management experience	.812	

* FL – Factor loading, Rel-reliability

As a result, the test generalised sixteen criteria into two main factors i.e. Dependability and Experience value and the relevant criteria are shown in Table 3. However the close-ended questionnaire in the online survey could not provide further information about those results. Thus, further investigations are needed. To determine the importance of each of the two groupings, a case study is conducted to provide some in-depth information about those criteria.

6.2 Case Study Finding

The findings of the case studies were divided into two main groups which were similar to the online survey findings.

6.2.1 Dependability Value

Table 2 shows the statement from both organisations, Company ABC and Company XYZ about all the items in the *Dependability* group.

As shown in Table 1, the respondents express the importance of the criteria of the Dependability group by giving their opinions and reasons of those criteria.

a. *The Partner(s) can be trusted to Act in the Best Interest of the Partnership*

Both organisations agreed that trust is a really important criteria to ensure that the collaborative project runs successfully and smoothly as well as more benefits could be gained. Without trust, impossible for organisations to do their work properly. All those statements related to trust could be seen in statements 1-3 and 1-2 for company ABC and company XYZ respectively.

b. *The Partner(s) showed Commitment (dedicated in Performing Tasks)*

Company ABC mentions that commitment is important due to the dateline and money invested in collaborative projects. This could be seen in statements 4-5 for Company ABC. For company XYZ, their collaborative projects involve multi-million dollars investment. Therefore, they feel that both parties should be responsible to perform the jobs given and to commit to the projects. Statement 3-4.

c. *The Partners showed Integrity (performed Task with Honesty)*

Integrity is also important for company ABC and company XYZ as shown in statements 6-8 and statements 5-6 respectively. Integrity seems to be critical to company ABC as it is part of their principles in performing the jobs and show

Table 2: Dependability group and the statements from Company ABC and Company XYZ regarding the criteria.

Company ABC	Company XYZ
1. "Trust is important and always number one in collaboration project.	1. "Trust is important at the early stage to ensure that they are not trying to steal some valuable information.
2. If you don't have trust, you can't do work smoothly.	2. It is to avoid us from keep monitoring our partners all the time."
3. Without trust, you can't do work properly. We do not have to worry or check our partners all the time."	3. "Commitment is highly needed because the investments of this project involve million dollars.
4. "Commitment is important because of date line.	4. "So both parties confident that they will commit to this project due to large number of money were invested in this project.... Of course commitment is important. This plant is a big project, high capacity required as well as the high risk project.
5. If you don't commitment, then it will sway from the dateline."	5. "You must know the project well. Then, you will do the project with honesty to ensure that both parties satisfied with the outcome of the project."
6. Integrity is important. One of the cores in this company is uncompromised integrity.	6. "...you should give accurate information if there is any problems related to the projects, not try to give wrong information just to cover the mistakes happened in that project."
7. "To me integrity is important morally but to project implementation and the final results I think they need prove or to lead much about integrity."	7. "It is important to share that skill because from the first stage we don't have that knowledge and skills...If we develop that skill by ourselves, it might take a long time."
8. Integrity helps to lead everybody in the projects to hold good principles of working environment and avoid any misjudging about others. Furthermore, integrity shows that you have good ethic in doing your jobs.	8. "Not important really important because we are not exporting our products to other countries. It just for domestic usage.
9. "Yes, it is important to transfer our technology and knowledge to them. They transfer us the opportunity to meet the influential people like politicians or who ever that can give us business."	
10. "Yes they should but it is not important because we are local so we are not entering any other country"	

that the partners have good ethics on the tasks given. For company XYZ, they mentioned that they try to avoid from giving inaccurate information purposely to cover any mistakes happened in past projects.

d. *The Partner(s) shared their Expertise/Skill with us*

Sharing skills or expertise is important for both organisations. Company ABC points out that the sharing will provide some benefits to them as shown in statement 9. Company XYZ need to collaborate with their partners because they do not possess the required skills and need to learn that certain skills from others. Statement 7 shows their statement regarding the criteria.

e. *The Partner(s) had Knowledge of the Local Market we want to Target*

Meanwhile, local market knowledge seems unimportant for company ABC as shown in statement 10. This is due to the fact that the company is just conducting their business locally. Similarly company XYZ also expressed the fact that they are producing products for domestic usage. Therefore, this criteria is not relevant to them as mention in statement 8.

6.2.2 Experience

Table 3 shows the statement from both organisations, Company ABC and Company XYZ on the items in the *Experience* group.

Table 3: Experience group and the statements from Company ABC and Company XYZ regarding the criteria.

Company ABC	Company XYZ
1. Yes, if your partners have that skills (negotiation skill with local government) that would be great.	1. " I think same as knowledge of local market and as I mention before, I cannot give
2. However, it is not really important because we could study about local regulation and learn it by ourselves."	2. "Project management skill is important to manage the project better particularly this project involve two different countries with different cultures. So if we have good project management, I think we should not have major problems to manage the human resources or cultures issue".
3. "Not really important because we will do the project management."	

- a. *The partner(s) had the Ability to Negotiate with Local Government where we wanted to do Business*

Company ABC expresses in statements 1-2 that that skill is not important compared to other criteria and they can study the regulations and laws related to the business.

Company XYZ seems inline with Company ABC by mentioning that the skill is not required in collaboration as they just negotiate with local partners and share same regulations as shown in statement 1 in Table 3.

- b. *The Partner(s) had Project Management Experience*

For company ABC, project management seems unimportant. The management of the company ABC will conduct the project management because they play a role as supervisor in collaborative projects and the partners just execute the instructions given by them. This could be viewed in the statement 3. In contrast, organisation XYZ mentioned in statement 2 that the experience is important in managing the project to avoid any problems in managing the human resources or cultural issues because it involves joint venture between two countries.

The case studies also reveal that instead of five criteria in the Dependability group, only three criteria seems to be related based on the views of the respondents. Those criteria are integrity, trust and commitment. Table 4 shows the views of both organisations regarding the relationship. Meanwhile, sharing skills/expertise and knowledge of local market seem to be unrelated to each other.

Table 4: Relationship among criteria.

Company ABC	Company XYZ
“... I think there is a relationship among trust, integrity and commitment. But to me, trust and commitment is more on delivery projects from contractors/vendors to us and from contractor within.”	“I think trust, commitment and integrity are complementary to each other. If we don't have trust in there, so it is impossible to collaborate and same thing for 2 other criteria. It seems that three of them are good starting point for us to collaborate with anyone.”

For the Experience group, two criteria in this group are not related to each other from the perspectives of Company ABC and Company XYZ.

7 DISCUSSION

The empirical findings presented in the previous sections raise two interesting issues. The first issue is about the partner selection criteria. The major finding from the empirical data shows partner selection is a two dimensional concept, i.e. Dependability and Experience. The ‘Dependability’ dimension of selecting partners consist of ‘Integrity’, ‘Trust’, ‘Commitment’, ‘Knowledge of local market’ and ‘Sharing expertise/skill’ whilst the ‘Experience’ dimension consists of two criteria: ‘Local market’ and ‘Project management experience’. Both dimensions are not explicitly acknowledged in previous studies or research. Thus, this represents a major finding or contribution in this area of study.

The second issue concerns the case study findings. Both respondents emphasised the importance of selecting those critical criteria. For instance, the importance of trust in collaboration/collaborative projects is in line with previous findings by many researchers. It was recognised by most researchers as in this study, as a smoother way of interaction and co-working (Camarinha-Matos and Afsarmanesh, 2006).

Third issue in this case study was the findings show that both organisations agreed that there is a strong correlation among the criteria of ‘trust, integrity and commitment’ but not for ‘sharing skill/expertise’ and ‘Local Market Knowledge’. Those relationships seem as important ingredients that need to be together and blend carefully in selecting partners to help all parties involve in collaboration could reach their setting goals. McKnight et.al (2002) mentioned three types of trust belief categories including integrity and therefore, the finding from this case study confirmed the previous study. Even though those criteria can not be seen physically, but such matter would not be neglected and need critical attention from all parties to be consider as important criteria in selecting partners.

However, the relationship of both criteria in the Experience group; ‘project management’ and ‘ability to negotiate with local government’; however is not obvious for those organisations. The findings of the survey and case study could help organisations to select partners for collaboration in a proper and more effective way by considering those critical criteria. In the world of globalisation where business could be conducted anywhere at any time, the idea of collaborative networks are an important means that could help organisations to develop partnerships

in different geographical areas. By considering the critical criteria given in this research, collaboration projects should achieve the target objectives with a higher rate of success.

8 CONCLUSIONS

The findings earlier have clearly shown that the notion of partner selection criteria is made up of two dimensions: 'Dependability' and 'Experience' value. Further investigations will be conducted by increasing the number of cases. In addition to finding more organisations, further studies will show how to integrate those criteria in collaborative networks such as those of digital collaborative networks where the interactions between partners are more complex.

REFERENCES

- Abramov, A. A. M., Skorobogatykh, I., Rykounina, I. & Vila, J. 1997. Partner selection and trust building in west european-russian joint ventures. *International Studies of Management and Organisation*, 27, 19-37.
- Benbasat, I., Goldstein, D. K. & Mead, M. 1987. The case research strategy in studies of information system. *MIS Quarterly*, 11, 369-386.
- Camarinha-Matos, L. M. & Hamideh, A. 2006. Collaborative networks: Value creation in a knowledge society. In: PROLAMAT 2006 IFIP International Conference on Knowledge Enterprise, 2006 Shanghai China. Springer.
- Creswell, J. W. 2009. *Research design: Qualitative, quantitative, and mixed methods approaches*, Thousand Oaks, Calif., Sage Publications.
- Creswell, J. W. & Clark, V. L. P. 2007. *Designing and conducting mixed methods research*, Sage Publications.
- Dacin, M. T. & Hitt, M. A. 1997. Selecting partners for successful international alliances: Examination of U.S and korean firms. *Journal of World Business*, 32.
- Dong, L. & Glaister, K. W. 2006. Motives and partner selection criteria in international strategic alliances: Perspectives of chinese firms. *International Business Review*, 15, 577-600.
- Fyall, A. & Garrod, B. 2005. Tourism marketing: A collaborative approach, *Buffalo, Channel View Publications*.
- Geringer, J. M. 1991. Strategic determinants of partner selection criteria in international joint ventures. *Journal of International Business Studies*, 22, 41-61.
- Himmelman, A. T. 1996. On the theory and practice of transformational collaboration: From social service to social justice. In: Huxham, C. (ed.) *Creating collaborative advantage* London: Sage Publications.
- Johnson, R. B., Onwuegbuzie, A. J. & Turner, L. A. 2007. Toward a definition of mixed methods research *Journal of Mixed Methods Research*, 1, 112-133.
- Kitchenham, B.A. and Pflieger, S.L. 2002. Principles of survey research: part 3: constructing a survey instrument. *SIGSOFT Softw. Eng. Notes* 27, 2, 20-24.
- Kannan, V. R. & Tan, K. C. 2002. Supplier selection and assessment: Their impact on business performance. *Journal of Supply Chain Management*, 38, 11-22.
- Killing, J. P. 1983. Strategies for joint venture success, *Praeger Press, New York*.
- Mat, N. A. C., Cheung, Y. P. & Scheepers, H. 2008. A framework for partner selection criteria in virtual enterprises for small medium enterprises In: International Conference on Service System and Service Management, 2008 Melbourne, Australia.
- Newman, I., Ridenour, C., Newman, C. & Demarco, G. M. P. (eds.) 2003. A typology of research purposes and its relationship to mixed methods research: *Thousand of Oaks, CA: Sage*.
- Nunnally, J. C. 1978. Psychometric theory, *McGraw-Hill, New York*.
- Shuman, J. & Twombly, J. 2008. Collaborative network management-an emerging role for alliance management. *The Rhythm of Business*.
- Tatoglu, E. 2000. Western joint ventures in turkey: Strategic motives and partner selection criteria. *European Business Review*, 12, 137-147.
- Thomlinson, J. W. C. 1970. The joint venture in international business: India and pakistan. *MIT Press*.
- Wildeman. The Alliances and networks: The next generation. *International Journal of Technology Management*, 15, 96-108.
- Yin, R. K. 2009. Case study research: Design and method. *Sage Publications*.