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Size still matters when firms choose business collaborators

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Abstract

Collaborate with peer-sized or larger-sized partner helps the firm to enhance its process, product quality, reputation, and market position. Therefore, when choosing collaborator, firms prefer peer-sized or lager-sized partners. Many empirical researches try to link the firm's size with the performance and result of collaboration. However, there are still many debates. Instead of using the firm's size, this paper use the compared size or size difference between collaborating firms to examine its influence on the performance of inter-firm collaboration. The results from qualitative case study and quantitative online survey in both Australia and China supported that size matters when firms select their business partners. Size difference also influenced trust level, the quality of communication, risk level, similarity in structure and process, and as a result, the performance of inter-firm collaboration.

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Collaborate with peer-sized or larger-sized partner helps the firm to enhance its process, product quality, reputation, and market position. Therefore, when choosing collaborator, firms prefer peer-sized or lager-sized partners. Many empirical researches try to link the firm's size with the performance and result of collaboration. However, there are still many debates. Instead of using the firm's size, this paper use the compared size or size difference between collaborating firms to examine its influence on the performance of inter-firm collaboration. The results from qualitative case study and quantitative online survey in both Australia and China supported that size matters when firms select their business partners. Size difference also influenced trust level, the quality of communication, risk level, similarity in structure and process, and as a result, the performance of inter-firm collaboration.

1 Introduction

The size of a company may affect its capability, scope, process, structure, regulations, behavior, and decision making. Large firms are more likely to possess more specialized assets, business networks, patents, and skilled labors (Teece, 1986). Therefore, the size of companies and their size differences play an important role in the partnership formation process and collaborating behaviors (Berg, et al., 1982; Burgers, et al., 1993; Ghemawat, et al., 1986; Hagedoorn and Schakenraad, 1994; Lane and Beamish, 1990; Osborn and Baughn, 1990; Shan and Hamilton, 1991). It also affects the performance and success of collaboration (Chandler, 1962; Porter, 1987; Rumelt, 1974; Teece, 1977).

Some researchers believed that the formation of inter-firm collaboration increases with the size of companies (Berg et al., 1982; Burt, 1983; Dussauge et al., 2000; Duysters and Hagedoorn, 1995; Ghemawat et al., 1986; Gulati, 1995b; Hagedoorn, 1995; Hagedoorn and Duyster, 2002; Hagedoorn and Schakenraad, 1994; Mytelka, 1991; Singh and Mitchell, 2005) because of broaden basis for potential collaboration, lower barriers to entry, higher network density, lower costs, and internationalization. However, some researchers argued that firms size do limited contribution to collaboration (Park and Ungson, 1997). One of the key reasons for these debates is the different definition of firm's size. Firm's size is usually defined in terms of firm's assets, sales, revenue, turnover, or average worldwide employee number of a firm (Duysters and Hagedoorn, 1995; Hagedoorn and Duysters, 2002; Hagedoorn and Schakenraad, 1994; Kale, 1999; Park and Ungson, 1997; Singh and Mitchell, 2005). However, the definition of firm's size is different in different countries and industries. If the empirical study adopted same definition for all firms from different countries, the result will be less reliable. Therefore, some researchers indicated that differ in firms' size are more likely to form alliances (Gulati, 1995a; Saxton, 1997). However, size difference of firm has not received systematic investigation in the literature. This paper adopted the official definition of firm's size in Australia and China and did further study on influence of size difference.

On the other hand, most of the empirical researches focused on firms from developed countries, such as Japanese, U.S. and European firms (Gulati, 1995a; Hagedoorn, 1995; Hagedoorn and Duysters, 2002; Hagedoorn and Schakenraad, 1994; Kale, 1999; Osborn and Baughn, 1990; Park and Ungson, 1997; Porter, 1987; Shane and Hamilton, 1991). The results of these studies can not be applied in developing countries (Kuada, 2002). As this paper studied both developing (China) and developed (Australia) countries, it is expected to provide more reliable results.

2. Definition of firm's size

Most researchers defined size in terms of firm's assets, sales, revenue, turnover, or average worldwide employee number of a firm (Duysters and Hagedoorn, 1995; Hagedoorn and Duysters, 2002; Hagedoorn and Schakenraad, 1994; Kale, 1999; Park and Ungson, 1997; Singh and Mitchell, 2005) and conducted empirical research based on this definition. However, most of these studies focused on developed countries and large enterprises. Small firms are reluctant to release their sales amount and annual turnovers. This argument is also supported by the interviewees from the first interviews in this study. Furthermore, firm's assets, average sales amount and turnovers are very different for different industries and countries, which are not accurate indicators for firm's size.

On the other hand, the definition of a firm's size is different in each country and even in different industries in the same country. It should be argued that a firm with 20 employees in a labor intensive nation (usually developing countries) is different in size with a firm with the same amount of employees in a capital or technology intensive nation (usually developed countries). For example, the formal definitions of SME (Small and Medium sized enterprise) and LE (Large enterprise) are different in Australia and China. Furthermore, the definition of firm's size in Australia is also different in the agriculture and service sectors. As this study focused on both developed country (Australia) and developing country (China), the definition of SME is adopted from the official definitions in both Australia and China, which is based on employee numbers.

Regardless of the different definition of firm's size, there are still debates on its influence on firm's performance and collaborating results. Therefore, instead of using firm's size, the compared size or size difference is adopted in this paper to test the influence on collaborating performance. For example, although have different employees, a small sized firm (with 10 employees) in Australia and a small sized firm (with 90 employees) in China are regarded as peer sized collaborating firms. Because both firm are in similar industry position in its country and may have access to similar government support as small firms. As this paper will focus on a study of Australian and Chinese telecommunication and related markets, the definition of a firm's size will adopt the employee number definition, which is used in both Australia and China.

3 Methodologies

The three main data collection techniques are observation, interviews, and structured questionnaires (Kale, 1999). The observation and interview methods are quite useful in collecting data that captures richness and uniqueness of phenomena. Questionnaires, on the other hand, are important to collect rich qualitative information. Therefore, both interviews and cross-sectional survey were adopted in this paper.

The research first applied a face-to-face interview. The interviewed companies are selected from two sources: (1) a list of companies provided by the Australian Telecommunications Industry Ombudsman (TIO), and (2) a list of monthly service providers' rank of China Mobile and China Unicom and the researcher's business network.

As a result, 31 interviews and 55 collaborating cases were collected from both Australia and China from Oct 23rd, 2008 to Jan 29th, 2009. The interviewees include CEOs, key managers, and senior executives, who have a good knowledge on collaboration and development strategy of the firm. The interviewees provided not only answers to the questions, but also some valuable suggestions for this research. Some interesting results are drawn from the qualitative study. As required by the interviewees, the names of the companies and managers are kept anonymous in this research.

The quantitative study was conducted in both Australian and China from 15th May to 6th Jul, 2010. The invited firms were selected from different industries of a national wide range in both Australia and China. The selected participants are taken from four sources: (1) Australian Telecommunications Industry Ombudsman (TIO) lists, (2) Rank lists of China Mobile and China Unicom, (3) The researcher's former business networks, and (4) extension of the researcher's business networks. An online survey system was developed by the researcher to save the costs and make it more convenience for the interviewees.

As a result, 342 online surveys were collected from both Australia and China, including 3 invalid (uncompleted) surveys. Therefore, the final valid surveys are 339, including 239 from China and 100 from Australia. The results covered all micro, small, medium, and large sized firms.

# 4 Results and analysis

4.1 Chinese case study

In China, firm size is generally measured by the number of employees. The definition for small and micro enterprises is less than 100 employees. The definition for medium enterprises is between 100 and 500 employees. And the definition for large enterprises is more than 500 employees (Harvie and Lee, 2003). Due to this definition, 45.8 per cent of the interviewed firms are small and micro sized enterprises, 12.5 per cent of the interviewed firms are medium sized enterprises, and 41.7 per cent of the interviewed firms are large enterprises. "…size is still a problem, who is bigger, who has more activity (Interviewee)." Figure 1.1 shows the vary sizes of the interviewed Chinese firms.

Figure 1.1 Size of interviewed Chinese firms
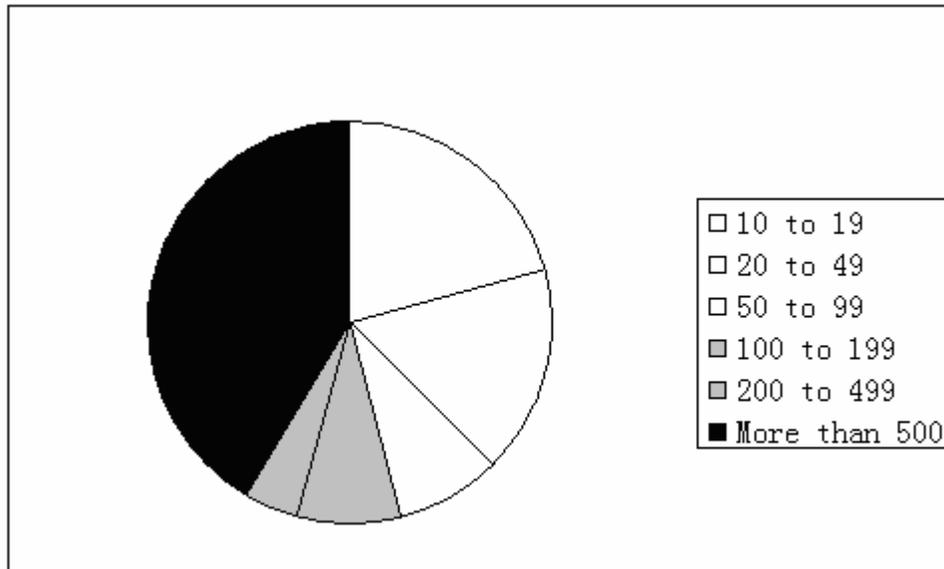
As shown in Figure 1.2, only 11.1 per cent of our studied collaborating cases (in the black pie slice) selected smaller sized firms as their top 5 collaborator. 60 per cent of them are international collaborations. And in all of these cases that selected smaller sized collaborators, the collaborators are content providers or partially content providers who have unique or original resources, technology, or products. On the other hand, 28.8 per cent of the studied collaborating cases (in the grey pie slice) selected peer-sized firms as their top 5 collaborator. And 60 per cent of our studied collaborating cases (in the white pie slice) selected larger-sized firms as their top 5 collaborator.

Figure 1.2 Size of the Chinese top collaborators
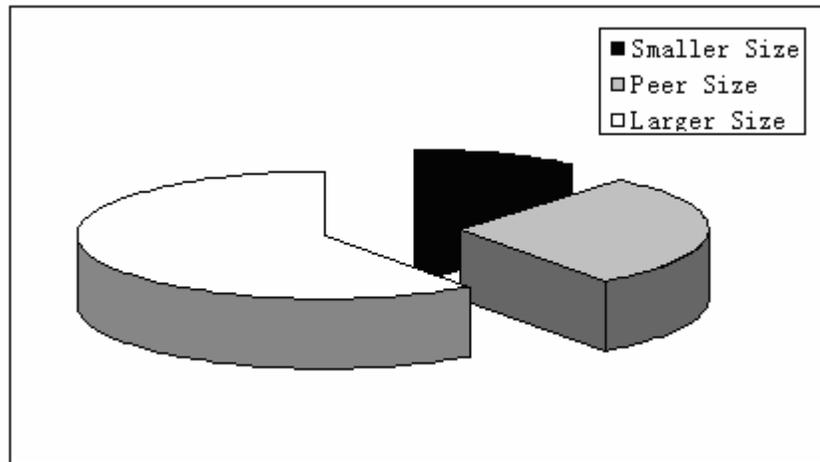
The outcome of the study supported that size still matters when firms select their business collaborators. A peer-sized or larger-sized partner is preferred. Firms usually choose peer-sized or larger-sized firms to keep their position, market share, and competitiveness.

"We only select the top 10 firms in each field to collaborate with to keep our leading position in the world (Interviewee)." The results show that only when there is irreplaceable technology, resources, or products with the potential collaborator, did the firms choose smaller-sized collaborators.

However, there is less supported that peer or larger sized partners also dominated in international collaboration. This is because that with a global view, it is easier to find irreplaceable technology, resources, or products to help the collaborating firms as well as the original firm keep its position in high technology and global market (Zhang, Hodgkinson and Harvie, 2009).

4.2 Australian case study

In Australia, firm size is also measured by the number of employees. The definition for small and micro enterprises is below 20employees. The definition for medium enterprises is between 20 and 200 employees (for the telecommunication and related industries). And the definition for large enterprises is more than 200 employees (Harvie and Lee, 2003).

In this research, 14.3 per cent of the interviewed firms is micro/small-sized enterprises (had less than 20 employees), 28.6 per cent firms are medium sized enterprises (had 20 to 199 employees), and the other 57.1 per cent firms are large enterprises (had more than 100 employees).

As shown in figure 1.3, 38 per cent of the interviewed firms choose larger-sized firms as their top collaborator, 62 per cent firms choose peer-sized firms as their top collaborator,

and 0 per cent firm choose smaller-sized firm as their top collaborator in Australia. All of our studied collaborating cases selected peer or lager sized firm as their most important collaborator.

Figure 1.3 Size of the Australian top collaborators
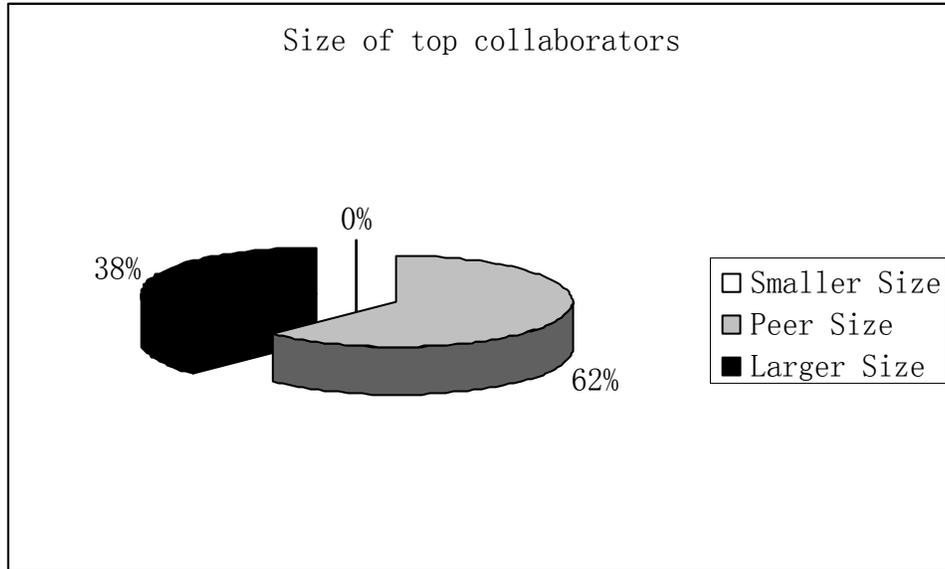
The outcome of the study strongly supported that size still matters when firms select their business collaborators. Firms prefer peer-sized or larger-sized business collaborators. The result is also in accord with the China study result. Firms usually choose peer-sized or larger-sized firms as their top collaborators to keep their position, market share, and competitiveness. The results will be further tested in the quantitative study.

4.3 Quantitative results

During May 15th, 2010 and Jul 6th, 2010, 239 valid online surveys are completed in China and 100 online surveys are completed in Australia. Excluding 33 unknown partner's size, 74 per cent of the firms choose peer-sized or larger-sized business collaborators. As shown in Figure 1.4, 46 per cent firms selected larger-sized business collaborators, 28 per cent firms selected peer-sized collaborators, and only 16 per cent firms selected smaller-sized collaborators in this study.

Figure 1.4 Compared size or size difference
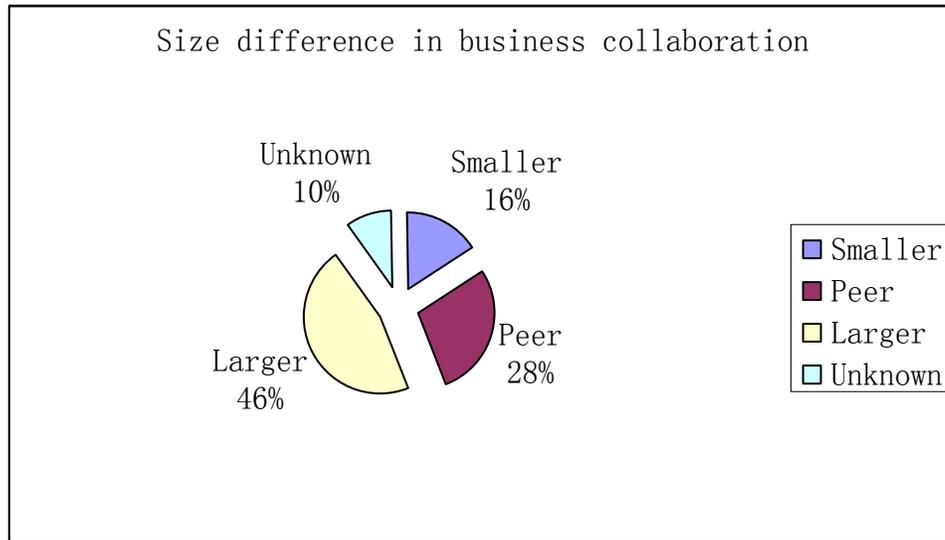
As separated by country, 66 per cent Chinese firms selected peer and larger sized collaborators, 22 per cent of them selected smaller partners; 92 per cent of Australian firms selected peer or larger sized collaborators and only 3 per cent of them selected smaller partners. The result is also in accord with the qualitative case study. Australian firms tend to select peer and larger sized enterprises as their business collaborators. They also prepared more before enter a collaborating relationships. Only 5 per cent Australian firms didn't know the partner's size when collaborated with them. However, 12 per cent Chinese firms have less information on their partners' size.

Firm's size is categorized by the official definition in both Australia and China for the telecommunication and related industries. The defined categorizes are: 1 for less than 5 employees, 2 for 5 to 19 employees, 3 for 20 to 99 employees, 4 for 100 to 199 employees, 5 for 200 to 499 employees, and 6 for 500 and more employees. In Australia, firms in size categorizes 1 and 2 are micro and small sized enterprises; 3 and 4 are medium sized enterprises; 5 and 6 are large enterprises. In China, firms in size categorizes 1, 2, and 3 are micro and small sized enterprises; 4 and 5 are medium sized enterprises; 6 are large enterprises.

Size difference is measured by the difference between collaborator and studied firm. It varies between -4 to 5 in this study. A negative size difference means the studied firm selected a smaller sized partner. Zero in size difference means both collaborating firm are in same size categorize. A positive size difference means the studied firm selected a larger sized partner. The greater the absolute value of size difference, the bigger gap between the studied firm's size and the size of its collaborator. The average similarity of business structure, similarity of working process, quality of communication (frequency, understanding, and efficiency of communication), trust level, risk level, depth of collaboration, width of collaboration, and subjective success rate of collaboration were

collected from the database for compared analysis.

As shown in figure 1.5, business structure (structure) and working process (process) are average higher between peer-sized or similar but larger sized firms. Similar sized firms usually have similar business structure and working process, which makes communication and collaboration easier and reduces the risks for misunderstanding. Firms can also learn from similar but larger sized firms.

Figure 1.5 Influence of size difference on structure and process similarity
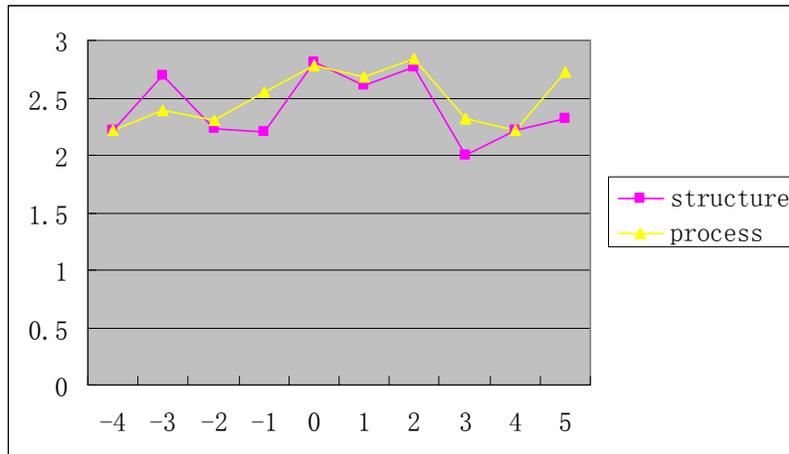
The quality of communication is calculated from the frequency of communication, the level of understanding during communications, and efficiency of communication. As shown in figure 1.6, the quality of communication (commu) is also higher and more stable between peer-sized firms. Communication is easier between similar sized firms, which reduces the costs of communication and decreases the risk of misunderstanding.

Figure 1.6 Influence of size difference on quality of communication
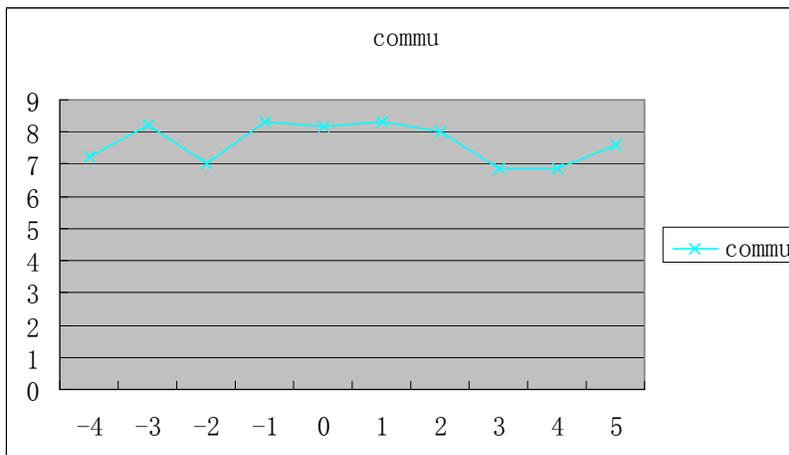
As shown in figure 1.7, trust level is higher and risk level is lower between peer-sized or similar but larger sized firms. Firms feel more "secure" when collaborate with peer-sized or similar but larger sized firms. It increases the trust level and decreases the risk level in business collaboration.

Figure 1.7 Influence of size difference on trust level and risk level
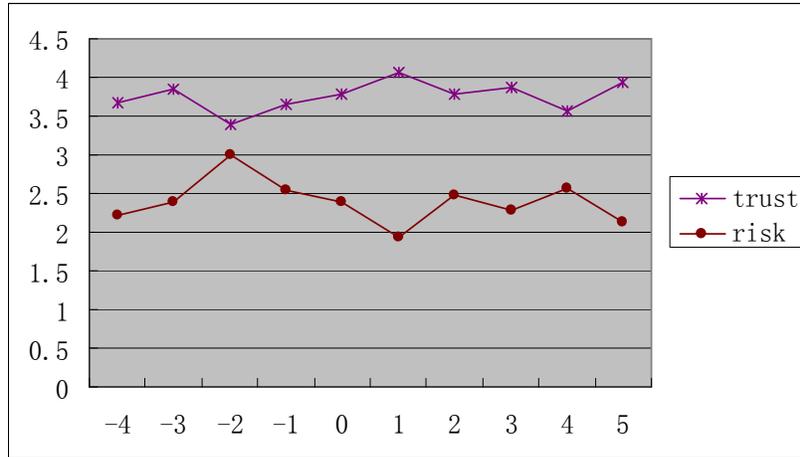
The width of collaboration is calculated from the count of different collaborating outcomes. The depth of collaboration is calculated from the sum of all the depth level of each benefit comes from business collaboration. As shown in figure 1.8, the depth (cdepth) and width (cwidth) of inter-firm collaboration increases when collaborating firms are similar size. Similar sized firms are easier to communicate and collaborate, which will increase the depth and width of collaboration between firms.

Figure 1.8 Influence of size difference on collaborating width and depth
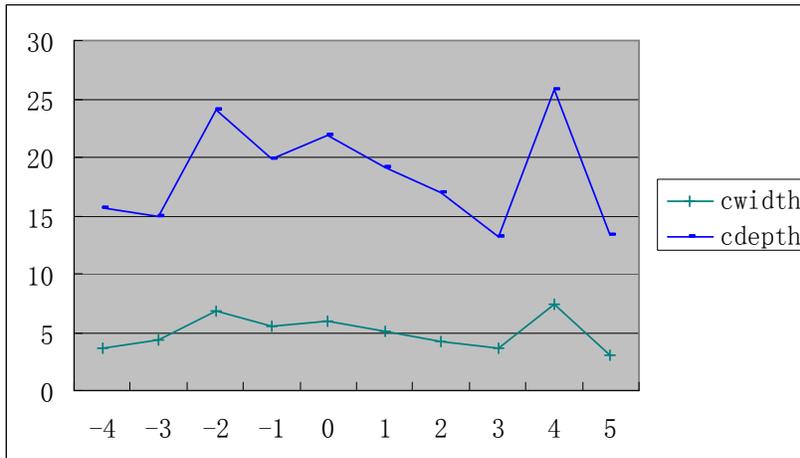
The performance of alliance is hard to be measured (Anderson, 1990; Gulati , 1998; Harrigan, 1985). Empirical results showed that both subjective and objective assessments are significant in measuring alliances' performance and result (Heide and Minor, 1992; Parkhe, 1993). Therefore, both the objective measurement (collaborating width and depth in figure 1.8) and subjective measurement (the evaluated success rate by the manager) are adopted in this study. It will provide more reliable result for the quantitative study. As shown in figure 1.9, the subjective evaluated success rate (success) for inter-firm collaboration decreased as size difference increases. When the partner's size is bigger than studied firm, it is harder to reach "success" in inter-firm collaboration. On the other hand, managers from bigger firms found it is easier to collaborate with smaller partners. These factors lead to higher subjective success rate for lower size difference.

Figure 1.9 Influence of size difference on subjective success rate
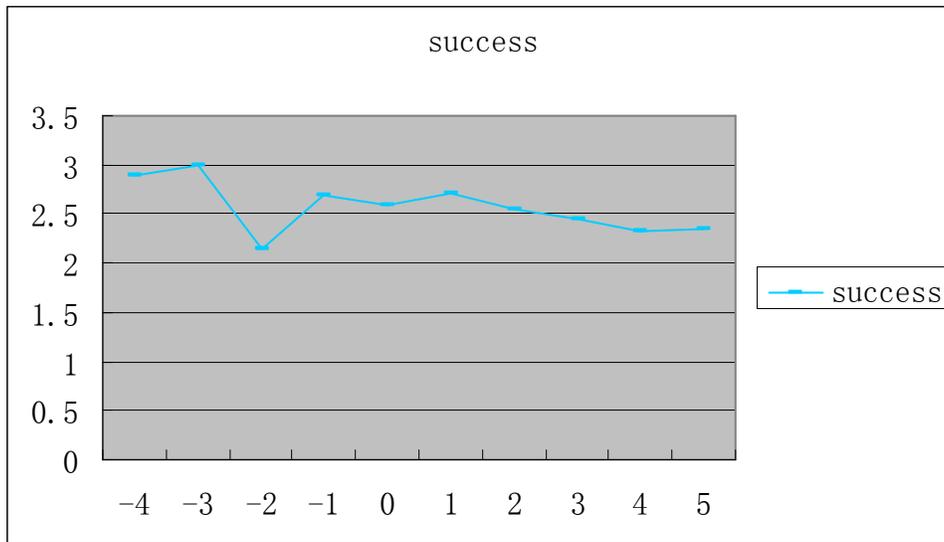
The results show that size difference influences similar business structure, similar working process, and quality of communication. When firm collaborate with a peer-sized or similar sized business partner, the costs of communication reduced and the quality of communication increased. As a result, it enhances the performance of collaboration.

5 Conclusions

The size of firm is usually defined in term of the firm's assets, sales, revenue, turnover, or average worldwide employee number of a firm. However, this definition has many problems and raises many debates. This paper adopted size difference between collaborating firms rather than pure size of one firm to analysis its influence on inter-firm collaboration.

Peer-sized collaborators have similar business structure, working process. Therefore, the depth of collaboration and width of collaboration is higher than those from different sized collaborators. The frequency, understanding, and efficiency of communication are also higher between peer-sized collaborators. Similar sized firms usually adopted similar communication methods and feel easier to communicate and understand with each other. As a result, both the depth and width of inter-firm collaboration increased when collaborating firms have peer or similar size. Trust level is higher between peer-sized or similar but larger sized firms. Firms feel more "secure" when collaborate with peer or larger sized firms. Therefore, the risk level also decreased between those collaborators.

Firms prefer peer-sized or larger-sized partners in business collaboration. Collaborations with peer-sized or larger-sized partner also helped the firm to enhance its process, product quality, reputation, and market position. Furthermore, similar sized partners have similar business structure and working process, which reduces both the costs of communication and risks of collaboration. As a result, it enhances the performance of inter-firm collaboration.

Some interviewed firms in Australian and China indicated that they prefer peer-sized or larger-sized business collaborators. The quantitative study result also supported that size still matters when firms select business collaborators.

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