Chapter 1
Introduction

1.1 Introduction

This study investigates the issues of the types, motives, benefits, risks and key determinants of successful inter-firm collaborations in the Chinese and Australian mobile telecommunication markets. Inter-firm collaboration has become increasingly important in the global economy (Lavie 2007). Firms rely on collaborations to access new resources, new technology, skills, latest market information, new markets and knowledge, to increase innovation, to reduce costs, and to overcome government policy barriers. Since 1990 the number of global strategic alliances has grown by more than 25 % annually (Bleeke and Ernst 1995). Inter-firm collaborations between competing firms and firms from different cultural backgrounds increased dramatically in recent years (Vilana and Monroy 2010).

As more firms adopt a collaboration strategy, it adds pressure on non-collaborating firms that are being increasingly subject to global competition (Wilson 2007). As Lank (2006, p. 1) indicated 'no organisation is an island' now. The problem of how to select a good partner, supplier, or customer is a crucial challenge for most firms. It is even more important for small and medium sized enterprises (SMEs) to plan and adopt collaboration strategies to survive fierce global competition (Lee 2007).

The study of inter-firm collaboration has attracted researchers from a number of disciplines including economics, management, and business studies. *Transaction* cost theory (Coase 1937; Williamson 1971, 1979, 1985, 2005), the resource based view (Demsetz 1973; Rumelt 1984; Das and Teng 1998; Barney 2001), and many other management and business theories have contributed significantly to a better understanding of this area (Porter 1980, 2007; Kay 1993; Hart 1995; Kale 1999; Harrison 2004).

Diverse terms have been used in the management, business, and economics literature to describe inter-firm collaboration, for example alliances, cooperation, coordination, coalition or partnership. On the other hand, most models of collaboration have adopted tangible profits or benefits (Contractor and Lorange 1988) as

the major outcomes from this activity, ignoring some important intangible benefits (e.g. enhanced relationships with government agencies or extended business networks). Therefore, by reviewing different definitions and terms used in the literature, this study defines inter-firm collaboration to be **"inter-firm activities that are aimed at generating tangible and/or intangible benefits for each firm involved"**.

Most of the existing studies focus only on firms from developed countries or/and only on large firms (Link and Bauer 1989; Lavie 2007). Less attention has been devoted to a comparative study between emerging and developed economies (Kuada 2002). In addition, most of the existing literature has focused on very general or traditional (e.g. agriculture or manufacturing) industries (Anderson and Narus 1990; Krogt et al. 2007; Mazzola et al. 2008). As inter-firm collaboration involves very dynamic and complex activity, an interesting and important issue is the identification of how such collaboration is changing in new and emerging industries such as the mobile telecommunication industry. In addition, is there any difference in the characteristics of inter-firm collaboration in different countries? Intangible benefits (e.g. Guan Xi) play a vital role in Chinese inter-firm collaboration (Lu et al. 2006; Su et al. 2009; Jia and Rutherford 2010). However, these benefits play a moderate role in western countries. Thus, there is a need for further and more detailed studies that examine inter-firm collaboration from a comparative industry and country perspective.

To fill this research gap, this thesis analyses and compares the existing literature with the aim of developing a general model of inter-firm collaboration. It provides an empirical analysis of collaboration in the mobile telecommunication industry in China and Australia. It will also identify key determinants of successful inter-firm collaboration in Australia and China by means of both qualitative and quantitative methods.

1.2   Contributions and Significance

Most empirical research on inter-firm collaboration has focused on the U.S., Japan, and a small number of European countries (e.g. Hamel et al. 1989; Hagedoorn 1993, 1995; Gulati 1995; Kale 1999; Hagedoorn and Duysters 2002), with little research having been conducted for most developing countries (Beamish 1985; Humphrey and Schmitz 1998; Narteh 2008) and Australia (More and McGrath 1999; Lohrke et al. 2006; Zhang and Harvie 2010). Some studies have omitted the majority of micro and small firms by using only annual reports and stock market reports.

The emergence of wireless and mobile networks has accelerated global communication and inter-firm collaboration (Fitzek and Katz 2006). New business opportunities and markets require new business models and collaborating strategies. However, there is a lack of studies on inter-firm collaborations in new and globally oriented industries. Previous collaboration types and models may not be

applicable for these newly developed industries and in an environment of global competition. A continued study on inter-firm relationships is essential to develop a robust understanding of business strategy (Singh and Mitchell 2005).

To address the gap in the existing literature regarding developing countries and new industries, this study will first conduct an empirical analysis of the Chinese and Australian mobile telecommunication markets and identify the major differences between them. In addition, this thesis will explore and highlight the key ingredients for successful collaboration in different countries. This thesis will also contribute to a better understanding of the importance and role of each factor in the outcomes and performance of collaboration.

With rich information obtained from specific interviews and robust data analysis from a quantitative survey, the results of this thesis will shed light on how to improve inter-firm collaboration, build a trusting relationship between firms, enhance collaboration performance and reduce collaboration barriers in local and global markets.

1.3   Research Questions and Methodologies

The aim of this thesis is to identify the collaborating types, benefits, risks, and factors that influence the final success rate or performance of collaboration in the Australian and Chinese mobile markets. It also identifies key determinants for successful inter-firm collaboration in broader business areas across these countries. Therefore, this thesis focuses on two primary research questions:

Q1: What are the major types, benefits, and risks arising from inter-firm collaboration in the Australian and Chinese mobile telecommunication markets?
Q2: What are the key determinates of successful inter-firm collaboration in China and Australia and do these differ?

To provide more reliable results for the questions above both qualitative and quantitative research methods are adopted as complementary methodologies in this study. A qualitative case study is used to identify the characteristics of the mobile telecommunication markets in China and Australia and answer the first primary research question. The quantitative study is designed to examine the key determinants and measures the importance of these upon the final success rate of inter-firm collaborations and answer the second primary research question.

The first primary research question is answered by industry analysis and qualitative case studies conducted in both Australia and China. The aim of the first research question is to identify the major characteristics of inter-firm collaboration in the Chinese and Australian mobile markets and find whether these results are different from previous empirical studies in other traditional industries. The results are expected to give evidence of the significance of this study. The second primary research question is answered by means of a quantitative study. To examine the research results in a broader context, the quantitative study is designed to cover

more industries (e.g. manufacturing and services industries). A collaborating model is adopted and modified from previous literature. Five key determinants of a successful inter-firm collaboration identified from the literature are: trust, communication, cultural similarity, firm size and experience. The contribution of each of these determinants is examined in the hypotheses proposed in Chap. 4. The identified determinants have been examined separately for their influence and relationship with the performance and final success rate of inter-firm collaborations by using hypotheses tests.

Data are collected separately for the qualitative and quantitative studies. Face to face interviews are conducted in both Australia and China for the qualitative study. The selected interviewees are CEOs or senior managers who have a good understand of the firm's business partners and its collaborating strategies in the selected mobile telecommunication firms. The interview questions cover business information, collaborating information, partner information and suggestions. Qualitative research in this thesis provides industry evidence and rich information on inter-firm collaboration such as previous collaboration problems and solutions.

To examine the research results of the qualitative study in broader business areas, the quantitative study extends the research range to include other industries. The quantitative data are collected through an online survey system and saved in a database automatically. An econometric analysis is carried as the main tool in the quantitative analysis. The complementary research involving qualitative and quantitative methods is expected to provide more reliable results for this thesis (Newman and Benz 1998).

1.4   Structure of Thesis

The thesis is divided into eight chapters, which are now briefly outlined. The first chapter is the introduction of the research, which includes the background of this study, its contribution and significance, research questions and methodologies, structure of the thesis and expected results.

The second chapter discusses definitions and previews theories used in the inter-firm collaboration literature. It reviews different definitions and terms used in previous literature and compares advantages and limitations of each definition. It also reviews the development and contribution of primary economic, management, and business theories on inter-firm collaboration. It compares the advantages and disadvantages of transaction cost theory, the behavioural theory of the firm, property rights theory, agency theory and the resource based theory in analysing inter-firm collaboration. It also explains the major theories adopted in this thesis.

The third chapter focuses on the literature relating to specific problems such as major motives, types, benefits, risks, and determinants of inter-firm collaboration. It reviews the literature from economic, management and business theoretical and empirical studies and summarises the results. The differences between developed countries and developing countries are also discussed in this chapter. The general

collaboration motives, types, benefits, risks and determinants from existing literature guide the design of the questionnaires to be used in both the qualitative and quantitative parts of the thesis.

Chapter 4 focuses upon the research methodologies used in this study. It shows how this research has been conducted, what research methodologies have been adopted, and how the research questions, hypotheses, and questionnaire have been designed. To achieve a better and more reliable analysis on inter-firm collaboration, both qualitative face-to face interviews and quantitative research methods are conducted (Kendall 2008). There is a lack of comparative study on developed and emerging economies (Kuada 2002; Narteh 2008). There are even fewer empirical firm level studies focused on Australia and China as most of these studies focused on macroeconomic trade and international relationships (Sheng and Song 2008). This thesis compares the differences and characteristics of the Australian and Chinese mobile telecommunication industries and the inter-firm collaboration in both countries through both qualitative interviews and a quantitative analysis. The comparative results are expected to fill a gap and shed light on future research in comparative studies. The questionnaires are designed to relate to the research questions and hypotheses of this study.

Chapter 5 analyses the history, development, and economic contribution of the global telecommunication industry.[1] With the development of a new generation of telecommunication technologies, the market requirement, services and business model have changed rapidly. The types of collaboration in this industry have also varied over time. Telecom firms are separated into three groups in this thesis: mobile device providers, operators and service providers, and content providers and technical providers. The characteristics of representative firms for each group are examined in this chapter. The different strategies and collaborating cases for these firms are also analysed in this chapter.

Chapter 6 analyses the history, development, industry structure, and economic contribution of the Chinese mobile telecommunication market, and discusses the results of the Chinese qualitative case study. In this chapter, the Chinese market is separated into four groups: (1) hardware producers, (2) operators, (3) service providers, and (4) content and technical providers. Then, the major firms from each group are analysed. Finally, the typical collaborating types, major benefits from inter-firm collaboration, main barriers for local and global collaboration, and most important factors for successful collaboration in the Chinese mobile sector are discussed.

Chapter 7 analyses the history, development, industry structure, and economic contribution of the Australian mobile telecommunication market, and discusses the results of the Australian qualitative case study. In this chapter the Australian market is separated into four groups: (1) hardware producers, (2) carrier service providers

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[1] Chapter 5 introduced the global telecommunication market and the reason why this industry is studied in this thesis. The following chapters six and seven studied the characteristics of the Chinese and Australian market and answered why these two markets are studied in the thesis.

and service providers (CSP/SP), (3) retailers, and (4) content and technical pro-viders. Each group and their representatives are analysed. Finally, the results of the Australian case study are discussed. Differences between the Australian and Chinese telecommunication markets are summarised at the end of this chapter.

Chapter 8 presents the quantitative analysis, which discusses the process, results, and implications of the quantitative study. First, all the variables are tested for validity and reliability. It attempts to answer the second primary research question. An ordered probit analysis is adopted to test the hypotheses. The reliability and validity of the data are discussed in the data analysis section. The expected sign of the coefficients and hypotheses are tested in this chapter. The importance of each factor in inter-firm collaboration and their implications are discussed. At the end of this chapter, two different computer technologies are discussed as complementary methods to that of econometrics in the study of inter-firm collaboration. The possibility of using computer intelligence in inter-firm collaboration is discussed.

Chapter 9 summarises the major results and main findings of this thesis. It highlights the contribution of this thesis to the literature and further research on inter-firm collaboration. The limitations of this research and potential future research are also discussed in this chapter. It also outlines how business managers, industry associations, and policy makers could benefit from this research.

1.5   Summary

This chapter provides a general introduction to the main focus of this thesis. It highlights the significant contribution of this thesis to inter-firm collaboration and cross national studies. It also outlines the research objectives and research questions focused upon in this thesis.

Both qualitative and quantitative research methods are used to answer the primary research questions. Data are to be collected from both China and Australia to meet the existing gap in the literature. The mobile telecommunication market is selected as a typical new dynamic sector to verify the key ingredients for successful collaboration in the qualitative study. These qualitative results are then further examined and extended to other industries through quantitative studies of both Australia and China.

The expected outcome is to provide insights into actions needed to enhance inter-firm and international collaboration in the global marketplace. The implications of this thesis will shed light on business collaborating strategies for individual firms, industry assistance and support by industry associations, and policy making for government agencies.

In the next chapter the definition of inter-firm collaboration used in this thesis is discussed. The development of theories related to inter-firm collaboration are reviewed and compared. The theories adopted in this thesis are also discussed before research questions are proposed.

References

Anderson J, Narus J (1990) A model of distributor firm and manufacturer firm working partnerships. J Market 54(1):42–58

Barney JB (2001) Is the resource-based 'view' a useful perspective for strategic management research? Yes. Acad Manage Rev 26(1):41–56

Beamish PW (1985) The characteristics of joint ventures in developed and developing countries. Columbia J World Bus 20:13–19

Bleeke J, Ernst D (1995) Is your strategic alliance really a sale? Harv Bus Rev 73(1):97–105

Coase RH (1937) The nature of the firm. Economics 4:386–405

Contractor FJ, Lorange P (1988) Cooperative strategies in international business. Lexington Books, San Francisco

Das TK, Teng BS (1998) Between trust and control: developing confidence in partner cooperation in alliances. Acad Manage Rev 23(3):491–512

Demsetz H (1973) Industry structure, market rivalry, and public policy. J Law Econ 16:1–9

Fitzek FHP, Katz MD (2006) Cooperation in wireless networks: principles and applications – real egoistic behavior is to cooperate! Springer, Dordrecht

Gulati R (1995) Social structure and alliance formation patterns: a longitudinal analysis. Adm Sci Q 40:619–652

Hagedoorn J (1993) Understanding the rationale of strategic technology partnering: inter-organizational modes of cooperation and sectoral differences. Strateg Manag J 14:371–385

Hagedoorn J (1995) A note on international market leaders and networks of strategic technology partnering. Strateg Manag J 16:241–250

Hagedoorn J, Duysters G (2002) External sources of innovative capabilities: the preference for strategic alliances or mergers and acquisitions. J Manag Stud 39(2):167–188

Hamel G, Doz Y, Prahalad CK (1989) Collaborate with your competitors and win. Harv Bus Rev 67(1):133–139

Harrison D (2004) Is a long-term business relationship an implied contract? Two views of relationship disengagement. J Manag Stud 41(1):0022–2380

Hart O (1995) Firms, contracts, and financial structure. Clarendon Press, Oxford

Humphrey J, Schmitz H (1998) Trust and interfirm relations in developing and transition economies. J Dev Stud 34(4):32–61

Jia F, Rutherford C (2010) Mitigation of supply chain relational risk caused by cultural differences between China and the West. Int J Logist Manag 21(2):251–270

Kale P (1999) Alliance capability & success: a knowledge-based approach. A dissertation in management, University of Pennsylvania

Kay J (1993) Foundations of corporate success. Oxford University Press, Oxford

Kendall L (2008) The conduct of qualitative interviews: research questions, methodological issues, and researching online. In: Knobel M, Coiro J, Lankshear C, Leu DJ (eds) Handbook of research on new literacies. Lawrence Erlbaum, New York, pp 133–150

Krogt VD, Nilsson J, Host V (2007) The impact of cooperatives' risk aversion and equity capital constraints on their inter-firm consolidation and collaboration strategies – with an empirical study of the European dairy industry. Agribusiness 23(4):453–472

Kuada J (2002) Collaboration between developed and developing country-based firms: Danish-Ghanaian experience. J Bus Ind Market 17(6):538

Lank E (2006) Collaborative advantage how organizations win by working together. Palgrave Macmillan, London

Lavie D (2007) Alliance portfolios and firm performance: a study of value creation and appropriation in the U.S. software industry. Strateg Manag J 28:1187–1212

Lee CW (2007) Strategic alliances influence on small and medium firm performance. J Bus Res 60:731–741

Link AN, Bauer LL (1989) Cooperative research in U.S. manufacturing: assessing policy initiatives and corporate strategies. Lexington Books, Lexington

Lohrke FT, Kreiser PM, Weaver KM (2006) The influence of current firm performance on future SME alliance formation intentions: a six-country study. J Bus Res 59:19–27

Lu H, Trienekens JH, Omata SWF (2006) Does guanxi matter for vegetable chains in China? A case study approach. In: Bijman J, Omata SWF, Trienekens JH, Wijnands JHM, Wubben EFM (eds) International agri-food chains and networks management and organization. Academic Publishers, Wageningen

Mazzola E, Perrone G, Diega SNL (2008) Shaping inter-firm collaboration in new product development in the automobile industry: a trade-off between a transaction and relational-based approach. CIRP Ann Manuf Technol 57:485–488

More E, McGrath M (1999) Working cooperatively in an age of deregulation strategic alliances in Australia's telecommunications sector. J Manag Dev Bradford 18(3):227–255

Narteh B (2008) Knowledge transfer in developed-developing country interfirm collaborations: a conceptual framework. J Knowl Manag 12(1):78–91

Newman I, Benz CR (1998) Qualitative-quantitative research methodology: exploring the interactive continuum. Southern Illinois University, USA, Board of Trustees

Porter ME (1980) Competitive strategy. Free Press, New York

Porter ME (2007) Towards a dynamic theory of strategy. Wiley, Boston

Rumelt RP (1984) Towards a strategic theory of the firm. Prentice Hall, Englewood Cliffs

Sheng Y, Song L (2008) Comparative advantage and Australia-China bilateral trade. Econ Pap 27 (1):41–56

Singh K, Mitchell W (2005) Growth dynamics: the bidirectional relationship between interfirm collaboration and business sales in entrant and incumbent alliances. Strateg Manag J 26:497–521

Su Z, Xie E, Li Y (2009) Alliance motivations, control mechanisms and alliance performance: evidence from China. Front Bus Res China 3(1):103–119

Vilana JR, Monroy CR (2010) Invluence of cultural mechanisms on horizontal inter-firm collaborations. J Ind Eng Manag 3(1):138–175

Williamson OE (1971) The vertical integration of production: market failure considerations. Am Econ Rev 61:112–123

Williamson OE (1979) Transaction-cost economics: the governance of contractual relations. J Law Econ 22(2):233–261

Williamson OE (1985) The economic institutions of capitalism. The Free Press, New York

Williamson OE (2005) The economics of governance. Am Econ Rev 95(2):1–18

Wilson C (2007) The cost of not collaborating. Telephony 248(13):25

Zhang Y, Harvie C (2010) Inter-firm collaboration in Australian telecom market. In: The 7th SMEs in a global economy conference, Malaysia