



Turun yliopisto
University of Turku

DEVIATIONS OF GOVERNANCE IN IT MULTI-SOURCING: A CASE STUDY

Tingting Lin

University of Turku

Turku School of Economics

Department of Management and Entrepreneurship, Information Systems Science

Supervised by

Professor Hannu Salmela
Turku School of Economics
University of Turku
Turku, Finland

Reviewed by

Professor Ilan Oshri
Loughborough School of Business and Economics

Professor Risto Rajala
Aalto University

Opponent

Professor Ilan Oshri
Loughborough School of Business and Economics

The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

Sarja E 3

ISBN 978-951-29-6471-0 (PRINT)

ISBN 978-951-29-6472-7 (PDF)

ISSN 2343-3159 (PRINT)

ISSN 2343-3167 (PDF)

Juvenes Print - Tampere 2016

ABSTRACT

IT outsourcing (ITO) refers to the shift of IT/IS activities from internal to external of an organization. In prior research, the governance of ITO is recognized with persistent strategic importance for practice, because it is tightly related to ITO success. Under the rapid transformation of global market, the evolving practice of ITO requires updated knowledge on effective governance. However, research on ITO governance is still under developed due to the lack of integrated theoretical frameworks and the variety of empirical settings besides dyadic client-vendor relationships. Especially, as multi-sourcing has become an increasingly common practice in ITO, its new governance challenges must be attended by both ITO researchers and practitioners.

To address this research gap, this study aims to understand multi-sourcing governance with an integrated theoretical framework incorporating both governance structure and governance mechanisms. The focus is on the emerging deviations among formal, perceived and practiced governance. With an interpretive perspective, a single case study is conducted with mixed methods of Social Network Analysis (SNA) and qualitative inquiries. The empirical setting embraces one client firm and its two IT suppliers for IT infrastructure services. The empirical material is analyzed at three levels: within one supplier firm, between the client and one supplier, and among all three firms. Empirical evidences, at all levels, illustrate various deviations in governance mechanisms, with which emerging governance structures are shaped.

This dissertation contributes to the understanding of ITO governance in three domains: the governance of ITO in general, the governance of multi-sourcing in particular, and research methodology. For ITO governance in general, this study has identified two research strands of governance structure and governance mechanisms, and integrated both concepts under a unified framework. The composition of four research papers contributes to multi-sourcing research by illustrating the benefits of zooming in and out across the multilateral relationships with different aspects and scopes. Methodologically, the viability and benefit of mixed-method is illustrated and confirmed for both researchers and practitioners.

Keywords: IT Outsourcing, Outsourcing Governance, Multi-Sourcing, Mixed-Method, Case Study

TIIVISTELMÄ

IT-palveluiden ulkoistamisen tarkoituksena on hankkia organisaation tarvitsemat IT-palvelut toiselta organisaatiolta. Hankittavien palveluiden laatu on aiemman tutkimuksen mukaan riippunut siitä, miten palveluiden ulkoistusta on hallittu. Aihepiiristä ei kuitenkaan ole olemassa integroitua tieteellistä viitekehystä. Lisäksi aiempi IT-palveluiden hallintaa käsittelevä empiirinen tutkimus on perehtynyt vain kahdenvälisiin asiakas–tuottaja suhteisiin. Tämän johdosta on tärkeää tutkia lisää IT-palveluiden ulkoistamisen hallintaa yleensä ja erityisesti niissä tilanteissa, joissa IT-palvelut on ulkoistettu useille toimijoille eli kyse on IT-palveluiden moniulkoistamisesta.

Tässä tutkimuksessa kehitettiin IT-palveluiden moniulkoistamisen hallintaan soveltuva integroitu, tieteellinen viitekehys, joka sisältää sekä hallinnan rakenteet että hallinnan mekanismit. Työn empiirisessä osassa erityisenä kiinnostuksen kohteena oli se, mitä palvelun hallinnasta oli virallisesti sovittu, kuinka eri osapuolet olettivat hallinnan tapahtuvan, ja miten hallinta käytännössä toteutui. Aihetta tutkittiin tulkitsevan tapaustutkimuksen keinoin yhdistäen puolistrukturoitua haastattelututkimusta ja sosiaalisten verkostojen analyysyä. Tutkimusaineisto kerättiin yhdestä asiakasyrityksestä ja sen kahdesta IT-palveluiden toimittajasta. Aineiston analysointi tehtiin kolmella tasolla: yksittäisen toimittajayrityksen, asiakkaan ja toimittajan välisen suhteen sekä kaikkien toimijoiden välisten suhteiden tasolla.

Tutkimuksessa osoitetaan, että aiempi IT-palveluiden ulkoistamisen hallintaa käsittelevä tutkimus on jakautunut kahteen tutkimusalueeseen, joista toinen keskittyy hallinnan mekanismeihin ja toinen hallinnan rakenteisiin. Tutkimuksessa kehitetty IT-palveluiden ulkoistamisen hallinnan uusi viitekehys hyödyntää sekä hallinnan mekanismeihin että hallinnan rakenteisiin liittyviä käsitteitä. Tutkielma osoittaa, että moniulkoistamiseen liittyviä toimijoita kannattaa analysoida sekä itsenäisinä toimijoina että verkoston jäseninä. Tutkimus nostaa myös esille hyötyjä laadullisten ja määrällisten tutkimusmenetelmien yhdistämisestä sekä tieteellisen tutkimuksen tekemisessä että yritysten käytännön kehitystyössä.

Avainsanat: IT-palveluiden ulkoistus, IT-palveluiden ulkoistaminen, ulkoistuksen hallinta, ulkoistamisen hallinta, moniulkoistaminen, monimenetelmätutkimus, tapaustutkimus

ACKNOWLEDGEMENTS

The experience of a doctoral study is, naturally, different for different people. Some people describe it as most enjoyable, others think it is hard and tedious. To be honest, I have experienced both extremes in the long journey to finalize my dissertation. It has been full of curiosity, inspiration, and excitement; sometimes it also has been confusing, frustrating and even painful. Fortunately, this journey was not a lonely endeavor. Indeed, without many dedicated people around me, it would not have been possible to finish this dissertation. Here I would like to express my sincere gratitude to the amazing people who has inspired me into the fascinating world of research, and who has offered me patience, support, and encouragement throughout the bumpy journey.

With no doubt, Professor Hannu Salmela is the first one I would like to thank. It is not only because he is my supervisor of the doctoral study, but also, and more importantly, because of his knowledge, patience, and kindness as a person. Without exaggeration, Hannu is the best supervisor I could ever wish for. He is the one to guide me into the gate of science, and he also offered me freedom and independence to proceed with my research. He understands my research interest, supports my academic activities, and never lost faith in me even when I was unconfident about myself. He showed me how to cope with difficulties, and always encouraged me with positive energy. With Hannu's help and inspiration, I have learned the scientific way of thinking, and also became more confident about what I do.

I am also grateful to the examiners of my dissertation, Professor Ilan Oshri from Loughborough School of Business and Economics and Assistant Professor Risto Rajala from Aalto University, for their devoted time and efforts on the insightful and constructive comments, which truly helped me to improve the quality of my work. Especially, their prompt response has greatly accelerated the process to complete my dissertation.

I would like to thank the faculty of Information Systems Science within the Department of Management and Entrepreneurship of Turku School of Economics (TSE) at the University of Turku (UTU) for giving me the opportunity to conduct this doctoral study, and for providing all the necessary support. I especially would like to extend my gratitude to the following. The other two professors besides my supervisor, Professor Reima Suomi and Professor Jukka Heikkilä, thank you for the valuable input and essential support! Eija Koskivaara and Hongxiu Li, thank you for the pleasant collaboration and enjoyable company in the teaching of

Research Methods in TJSRM course! Timo Leino, thank you for encouraging me to commence this doctoral study, and for the important support! My dear colleagues, José Teixeira, Abayomi Baiyere, Marko Niemimaa, Ping Wang, Anne-Marie Tuikka, Olli Sjöblom, Jonna Järveläinen, Kai Kimppa, and Xiaoyu Xu, thank you for your lovely company, inspiring discussions, and cordial help! Particularly for this dissertation, José has been a great coauthor and working with him deepened my knowledge of Social Network Analysis; Anne-Marie has generously devoted her time to help me by translating the abstract into Finnish. In addition, I would like to thank Birgit Haanmäki for her constant help throughout my study, and even after her retirement. All of you have made my journey a wonderful and memorable experience!

My heartfelt gratitude also goes to my talented coauthors and collaborators: Dr. Giovanni Vaia from Ca' Foscari University of Venice, Dr. Riitta Hekkala from Aalto University, and Associate Professor Bo Yang from Renmin University of China. It was such a pleasure working with you! For my research visits, Giovanni hosted me in Venice, Italy, and Bo Yang hosted me in Beijing, China. These have been truly memorable experience and productive collaborations!

I am deeply indebted to the companies where I conducted the case study. Due to the consideration of confidentiality, I can only thank them without mentioning the names. Without their trust, commitment and effort, my research material wouldn't be this rich and extensive.

Several scholars, both near and far, have been very influential on my study. Dr. Eija Karsten from Åbo Akademi University has closely followed my progress, and the discussions with her have been very fruitful. Professor Christer Carlsson, also from Åbo Akademi University, has offered valuable comments in several TISRA seminars, and has been very encouraging to me. Professor Mike Newman from Manchester Business School, during various seminars and meetings, helped me with comments on my dissertation progress, as well as suggestions on my research papers. Professor Julia Kotlarsky from Aston Business School has helped me with the development of a paper during and after the Global Sourcing Workshop, which enhanced my understanding in the field of sourcing, and my knowledge on the process of publication. Professor Anne Kovalainen and Professor Kari Lukka from my own school, inspired me from the very beginning of my study, with the guidance on the fascinating qualitative methods, and the deep thinking of true scholarship. With their selfless help, I have become a better researcher, and also a better person.

I would like to acknowledge the funding institutions who offered salary and grant to support my study, including Turku Center for Computer Science (TUCS), Jenny ja Antti Wihurin Rahasto, TSE, UTU Graduate School, Liikesivistysrahasto (LSR) and UTU Doctoral Programme in Mathematics and Computer Sciences (MATTI). I am also grateful to TUCS, TSE, KAUTE Foundation and Turun

Kauppaseuran Foundation for supporting my research trips. Thanks to the Turku School of Economics Support Association (Turun Kauppakorkeakouluseura), the printing costs of the dissertation is subsidized.

Here I wish to thank my friends, whose names have not been mentioned above, for bringing me joy and light during this journey. Especially, the IMMIT family has always been a gem in my life, where I harvested the dearest friendship and still keep in touch after so many years. I also would like to express my appreciation to all my students in the TJSRM course, maybe you don't know, but you have always been a source of inspiration and encouragement for me. I have learnt so much from you too!

Finally, my deepest gratitude goes to my family for their unconditional love, care and support. Especially, I thank my mother, Lili Lin, for keeping learning new things and study hard even after her retirement. This spirit is so inspiring for me, and keeps me going even during hard times. Last but not least, I thank my husband, Yifeng Xi, for taking this journey of life together with me.

Kaarina, 2 May 2016

Tingting Lin



Table of contents

ABSTRACT

TIIVISTELMÄ

ACKNOWLEDGEMENTS

1	INTRODUCTION	13
1.1	Motivation	13
1.2	Research question.....	15
1.3	Research setting and overview.....	16
2	THEORETICAL BACKGROUND.....	19
2.1	The research stream of ITO: A review of literature reviews	19
2.2	ITO governance.....	26
2.2.1	Governance structure	27
2.2.2	Governance mechanisms	29
2.2.3	Aligning governance mechanisms with governance structure.....	32
2.3	The governance of IT multi-sourcing.....	34
2.3.1	Multi-sourcing models.....	35
2.3.2	ITO governance in the context of multi-sourcing.....	39
2.4	Positioning this research.....	42
3	METHODOLOGY.....	43
3.1	Philosophical perspective.....	43
3.2	Case study methodology	46
3.2.1	Rationale for case study.....	46
3.2.2	Case description.....	48
3.3	Mixed-method approach	50
3.3.1	Purpose of mixing methods	51
3.3.2	Qualitative inquiries.....	52
3.3.3	Social Network Analysis.....	56
3.3.4	Interpretive integration.....	59
3.4	Implementation of methods.....	61
4	FINDINGS	64
4.1	The concept of governance in ITO.....	64
4.2	Vendor's governance structure.....	65
4.3	Governance in an ITO dyad	67
4.4	Governance of the multi-sourcing triad	68

5	CONCLUSIONS	70
5.1	Answering the research questions	70
5.2	Theoretical contribution.....	72
5.3	Practical contribution.....	74
5.4	Limitations and future research	76
	REFERENCES.....	77

List of attached publications

Research paper 1: Lin, T. – Vaia, G. (2015). The Concept of Governance in IT Outsourcing: A Literature Review. In: *ECIS 2015 Proceedings*.

Research paper 2: Lin, T. – Hekkala, R. (2016). Governance Structure in IT Outsourcing: a Network Perspective. *Strategic Outsourcing: An International Journal*, 9 (1), 38-59.

Research paper 3: Lin, T. (2013). It Outsourcing At the Stage of Psychological Contract: Governance-In-Practice and Governance-In-Contract. In: *ECIS 2013 Proceedings*.

Research paper 4: Lin, T. (2015) Multi-Sourcing Governance: In Perception and in Practice. In: *Achieving Success and Innovation in Global Sourcing: Perspectives and Practices*, ed. by I. Oshri – J. Kotlarsky – L. P. Willcocks, 187-205. Cham: Springer International Publishing.

List of figures

Figure 1	Research process	17
Figure 2	Organization of the empirical papers	18
Figure 3	Stages of outsourcing	21
Figure 4	Multiple perspectives to outsourcing	22
Figure 5	The most frequent ITO topics	23
Figure 6	Interactions among ITO success and its determinant	24
Figure 7	Models of ITO decisions and outcome	25
Figure 8	Multi-vendor outsourcing: The Kodak case	35
Figure 9	“Multiple IT suppliers that act as one”: The BP case	36
Figure 10	Two-stage offshoring: The Pennysoft case	37
Figure 11	Guardian vendor multi-sourcing: The Shell case	38
Figure 12	Broker model of selective outsourcing: The SA Water case	39
Figure 13	Decomposed “How” sub-stages	42
Figure 14	Iterative research process	46
Figure 15	Task allocation between two suppliers	49
Figure 16	Multi-layer networks of outsourcing	58

List of tables

Table 1	Literature reviews on ITO revisited	20
Table 2	Contractual governance and relational governance	29
Table 3	Aligning governance mechanisms and governance structure	34
Table 4	ITO governance in different multi-sourcing models	41
Table 5	Philosophical perspectives and basic assumptions	44
Table 6	Intensive and extensive case study	48
Table 7	Interviews	53
Table 8	Meeting observations	55
Table 9	SNA: network construction and analysis	59
Table 10	Methods applied in each paper	62
Table 11	Answering the research question	71
Table 12	Vendor structure for the multi-sourcing case	75



1 INTRODUCTION

1.1 Motivation

Since Kodak's landmark outsourcing deal in 1989, the research of Information Technology Outsourcing (ITO) ¹ has attracted increasing attention among Information Systems (IS) scholars. As a highly practice-oriented research stream, the definition of ITO has evolved together with the evolution of outsourcing practice (Dibbern, Goles, Hirschheim, & Jayatilaka, 2004; Hätönen & Eriksson, 2009). In general, IS literature views outsourcing as a shift of production and/or process venue of IT/IS activities from internal to external of an organization; whereas the evolution of its conceptualization pertains to the nature of client-vendor relationship, from a cost-driven contracting-out to a risk-sharing and long-term partnership, as the scope and scale of outsourcing has expanded dramatically in practice. Today, besides cost reduction, practitioners expect to achieve more strategic goals through outsourcing, such as accessing external resources through “*sustainable win-win relationships*” to enhance their competitive advantage (Gartner, 2015).

Unlike a decade ago, when Dibbern et al. (2004) acknowledged client-vendor relationship as a research gap, in today's ITO research, our understanding on this topic is increasingly wider and deeper (e.g. Gonzalez, Gasco, & Llopis, 2006). However, despite the rich knowledge obtained in prior research, the client-vendor relationship is evolving all the time in practice, for which constant renewal of theoretical understandings is necessary. According to the outsourcing index of Information Service Group (ISG, 2015), the number of mega-relationships with over \$100 million annual contract value (ACV) have shrunk rapidly, whereas smaller deals with ACV lower than \$40 million have become the driven force of the global outsourcing market. Particularly in ITO, with the fast changing technologies and evolving operational models, flexibility becomes an essential demand, which also entails shorter contracts and lower costs. Thus industrial buyers started to avoid long-term and large deals, such as IT infrastructure, and increasingly sign contracts for specialized cloud and other IT services provided by smaller vendors. Moreover, such smaller contracts are often heavily multi-sourced to different vendors. The evolved nature of ITO relationships have posed new

¹ In this dissertation, ITO is used as a broad notion to address outsourcing phenomenon in the field of Information Systems (IS) research. Thus I do not intend to differentiate ITO with other similar terms, such as IS outsourcing, which are rather treated as synonyms in this study.

challenges on relationship management, especially on the governance of ITO under such transformation of global market. In prior research, ITO governance is recognized with persistent strategic importance for practice, because it is tightly related to ITO success (Lacity, Khan, & Willcocks, 2009). However, research on ITO governance is still under development, owing to the scarcity of empirical studies with an integrated theoretical framework, as well as the lack of variety in empirical settings other than dyadic client-vendor relationships.

In ITO literature, the concept of governance is predominantly framed by the theory of Transaction Cost Economics (TCE) (Gonzalez et al., 2006; Lacity & Hirschheim, 1993; Williamson, 1975). In this view, the mechanism of contract has been emphasized to govern ITO as a form of transaction. However, due to the increasing importance of post-contractual collaboration in ITO where “incomplete contracts” emerges (e.g. Gefen, Wyss, & Lichtenstein, 2008), the lens of TCE becomes incomprehensive, and additional theoretical lenses focusing on relational aspects are needed. Based on theoretical and empirical focuses, prior studies on ITO governance can be divided into two strands: governance structure and governance mechanisms. Although theoretical efforts have been presented on integrating these two strands into one theoretical framework (e.g. Miranda & Kavan, 2005), such studies are still scarce; especially, we still lack empirical studies to support such theoretical integration.

On the variety of ITO relationships, most of our prior understandings on the phenomenon of ITO governance are based on empirical settings of traditional ITO dyads, i.e. relationship between one client and one vendor. Nowadays, multi-sourcing, i.e. outsourcing to multiple vendors, has become an increasingly common practice in ITO (ISG, 2014), and its new challenges must be attended by both ITO researchers and practitioners (Bapna, Barua, Mani, & Mehra, 2010). For instance, different vendors, who are usually competitors, would have to collaborate to achieve the client’s business goal; moreover, the geographically dispersed nature of multiple vendors, which is more and more common with the globalization, might bring further complications to such collaboration. Furthermore, new challenges are also posed to the IT function in the client organization, calling for updated capabilities to co-create value with multiple vendors (Lempinen & Rajala, 2014). Therefore, in addition to our knowledge based on dyadic relationships, more research is needed to advance the understanding of ITO governance in this new context with multiple vendors. Indeed, different multi-sourcing researches have emerged in recent years on various aspects, such as multi-sourcing decisions (Bapna, Gupta, Ray, & Singh, 2013; Cullen, Seddon, & Willcocks, 2005), vendor portfolio selection (Fridgen & Mueller, 2011), vendors’ knowledge transfer (Schott, 2011), and recommended management practices (Beck, Schott, & Gregory, 2011). The topic of multi-sourcing governance, though recognized as a crucial aspect to manage the

complexities and interdependencies in multi-sourcing (Bapna et al., 2010), is still under developed.

Motivated by such research gaps in ITO governance, this study aims to understand the governance of multi-sourcing with an integrated theoretical framework incorporating both governance structure and governance mechanisms.

1.2 Research question

As mentioned in the last section, the outsourcing practice has been evolving constantly in the global market, thus the corresponding governance needs to adapt to such evolution. Especially in the multi-sourcing of IT, the persistent interaction between client and vendors further entails the governance model to be frequently reviewed and updated. Under such dynamic context, the practice of governance will deviate, more often than not, from the pre-defined formal governance model. Besides, such practice may also deviate from participants' ex-ante perception of governance. While prior studies have shed light on developing prescriptive governance models for ITO success (Koh, Ang, & Straub, 2004; Saunders, Gebelt, & Hu, 1997), today's market situation calls for an alternative approach to understand governance, starting from what actually happens in practice to inform adaptive decisions to update the formal model. Therefore in this study, I choose to explore the emerging deviations among formal, perceived and practiced governance. Accordingly, the main research question is formulated:

RQ: How does governance practice deviate from the formal and perceived governance model in IT multi-sourcing?

To answer the research question, the following sub-questions are scrutinized within a real-life multi-sourcing scenario in each of the empirical papers:

- *How do vendor's interpersonal networks deviate from their perceived governance structure? (Paper 2)*
- *How does governance practice deviate from the ITO contract between client and one of the vendors? (Paper 3)*
- *How does practice deviate from perception in the ITO governance among client and multiple vendors? (Paper 4)*

The research question has set the stage for this research, focusing on the comparison among the formal stipulations, perception, and the practice of governance. The formal governance model accords to the stipulations related to governance in formal documents such as the contract. The perceived governance, on the other hand, lies in the perceptual experience of participants from multiple

parties. Last but not least, the practice of governance is observed from the routinized and ad-hoc activities of participants, including interpersonal communication networks as an important aspect. In the research papers, comparisons are conducted through different methods (see Chapter 3) on the basis of the conceptualization of governance, including governance structures and governance mechanisms (see Chapter 2). An overview of the included research papers will be presented in the next section.

1.3 Research setting and overview

This dissertation consists of two parts, an overview and a collection of research papers. The first part is organized in five chapters to summarize and synthesize my doctoral study as a holistic effort¹. This first chapter sets the stage for the research topic with the motivation and research questions, as well as an overview of the dissertation.

Chapter 2 presents the theoretical background. It starts from a review of literature reviews on ITO, providing an overall landscape of the research field to position this study. Then, the concept of ITO governance is scrutinized based on prior research on this specific topic. Finally, the focusing context of IT multi-sourcing is reviewed with descriptions of different multi-sourcing models and the specific requirement of governance in this context.

Following the theoretical background, Chapter 3 introduces the methodology adopted in this study. Besides general discussion on the chosen philosophical perspective and case study methodology, the empirical case is also described in this chapter. Furthermore, the approach of mixed-methods is elaborated in details, including the elaboration of purpose, the conduct of each method, and how the methods are integrated. In addition, the implementation of methods in each research paper is also summarized in this chapter.

The last two chapters synthesize the findings and conclude this study with key implications. Chapter 4 is an overview of findings from each research paper. Besides the summaries, this chapter also shows how each sub-questions are answered, thus provides a holistic view to integrate the papers into this dissertation. In Chapter 5, the main research question is answered combining the implications from each paper. Last but not least, both theoretical and practical contributions are suggested, together with remarks on limitations and future research.

As the second part of this dissertation, the collection of four research papers shows a dialogue between literature and empirical material in the conduct of this research. Paper 1 (Lin & Vaia, "The Concept of Governance in IT Outsourcing: A

¹ These five chapters in the first part were developed with the intention to integrate the main theoretical rationales and contributions of individual research papers in the second part. Therefore, some necessary overlap between the two parts may be observed.

Literature Review”, ECIS 2015) is a review on ITO governance literature, in order to synthesize prior conceptualizations on this topic, identify research gaps and support the positioning of this research. In my research, I have opted for an iterative process in literature and empirical study, in which the review of literature is not aiming to pre-define hypotheses or research frameworks, but rather conducted in parallel with the empirical study. Through the analysis of data, more understandings are generated on the research question; accordingly, the selection and analysis of literature are more and more purposeful and relevant throughout the iteration. Therefore, though this paper is almost the last one to be finalized, the relevant literature has been reviewed and analysed since the beginning of my research (Figure 1). For the same reason, as shown in Figure 1 and Figure 2, the empirical papers are not associated with chronological order, but rather as building blocks constructing the full case.

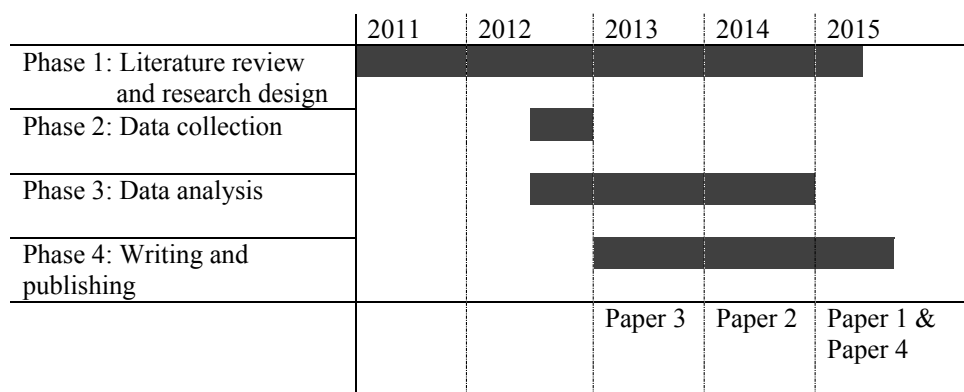


Figure 1 Research process

The empirical study is presented in the rest three papers, illustrating the single case study I have conducted on a multi-sourcing setting for IT services. In 2012 (Figure 1), the empirical material was collected in all involved firms within this multi-sourcing relationship, including one client firm (CL) and its two IT suppliers (SP1 and SP2)¹. A more detailed case description will be presented in the methodology chapter. Here it is worth mentioning that this case study is not only motivated by the research opportunities revealed in the literature review, but also initiated by my former work contacts in the client firm. Thus, from the very beginning, this research is conceived with both purposes of theoretical contribution and practical impact. Due to the complexity of the case, several sub-cases are constructed in the empirical papers for a complete storyline. Paper 2 (Lin &

¹ For anonymity, I used different pseudonyms for the client and supplier firms in different papers. The client is referred to as Beta (Paper 2), NI (Paper 3), and CL (Paper 4); the first supplier is referred to as Alpha (Paper 3), KIM (Paper 2), and SP1 (Paper 4); the second supplier is only analysed in Paper 4, and is referred to as SP2. Here in the overview chapters, the pseudonyms of Paper 4 is followed.

Hekkala, “Governance Structure in IT Outsourcing: a Perspective of Interpersonal Networks”, *Strategic Outsourcing: An International Journal*. Forthcoming) is an intra-organizational case study from SP1’s perspective, aiming to explore and empirically understand how governance mechanisms manifested by interpersonal networks can reflect and influence the perceived ITO governance structure. Paper 3 (Lin, “IT Outsourcing at the Stage OF Psychological Contract: Governance-in-Practice and Governance-in-Contract”, ECIS 2013) copes with the ITO dyad between CL and SP1, which empirically contrasted the governance structure revealed by different mechanisms respectively in practice and in contract. Last but not least, Paper 4 (Lin, “Multi-Sourcing Governance: in Perception and in Practice”, GSW 2015) examines the multi-sourcing relationships involving all three parties of CL, SP1 and SP2. It shows how the difference of governance mechanisms, in perception and in practice of each involved party, can cause the divergence of governance structure, which ultimately raised various conflicts in different relationships of multi-sourcing (i.e. between CL and SP1, between CL and SP2, and between SP1 and SP2), especially between the two vendors. This paper also brings implications on how to re-structure the governance of such multi-sourcing relationships. The association among empirical papers is shown in Figure 2.

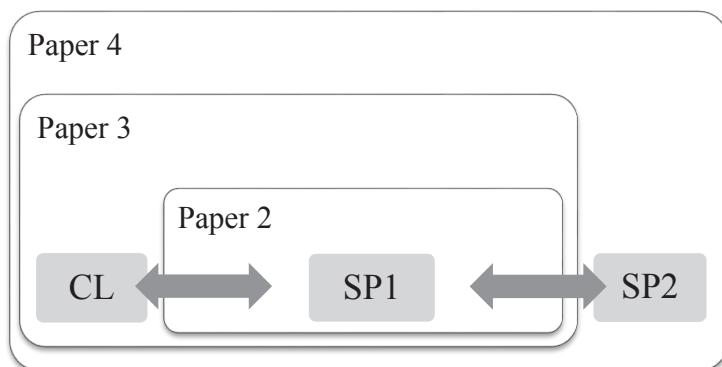


Figure 2 Organization of the empirical papers

2 THEORETICAL BACKGROUND

This chapter constructs the theoretical background of this research. First, ITO as a general topic is first reviewed based on four seminal literature reviews. Then, the specific topic of ITO governance is summarized with two identified strands: governance structure and governance mechanisms. Moreover, the focused context of multi-sourcing is elaborated, revisiting different multi-sourcing models and ITO governance in this new context. Last but not least, this research is positioned based on the literature background.

2.1 The research stream of ITO: A review of literature reviews

As pertinent literature proliferates through the years, many literature reviews have emerged, providing syntheses on “what has been done on ITO research” from various perspectives and under diverse contexts. These literature reviews have also illustrated a rich picture of the research stream at different time slices of ITO history. To clarify research gaps and to position my own research, a review of these literature reviews will be beneficial. Thus I will start this chapter by introducing and discussing four major literature reviews on ITO in a historical order (Table 1).

In the earliest comprehensive literature review on ITO, Dibbern, Goles, Hirschheim and Jayatilaka (2004) surveyed the first decade of outsourcing research involving a wide range of outlets, including nine mainstream IS journals, seven major management journals, three applied management publications, and two major IS conference proceedings. In their research framework, they identified five outsourcing stages, i.e. *why*, *what*, *which*, *how*, and *outcome*, to accommodate different research objectives out of the literature. Moreover, these five stages are further categorized into two main phases, namely *decision process* and *implementation*. This stage model of ITO, as depicted in Figure 3, is not only a good framework for analysing the ITO literature, but also a concise summary of the outsourcing lifecycle in practice.

Table 1 Literature reviews on ITO revisited

<i>Authors</i>	<i>Time span of reviewed literature</i>	<i>Number of included articles</i>	<i>Analyses</i>
Dibbern et al. (2004)	1992–2000	84	<ul style="list-style-type: none"> • Outsourcing stages • Theoretical foundations • Research approaches
Gonzalez et al. (2006)	1988–2005	131	<ul style="list-style-type: none"> • Research methodologies • Topics and scope • Authors and countries
Lacity et al. (2009)	1990–2008	191	<p>Six topics relevant to practice:</p> <ul style="list-style-type: none"> • Determinant of ITO • ITO strategy • ITO risks and mitigation • Success determinants • Client and supplier capabilities • ITO varieties
Lacity et al. (2010)	1992–2010	164	<ul style="list-style-type: none"> • Dependent variables • Independent variables • Relationships between dependent and independent variables

As a review on early literatures, Dibbern et al. (2004) delineate the historical landscape of ITO research during the years 1992-2000. They argue that the research domain was already maturing, having developed a diversity of focal objectives, theoretical bases and relevant methods during the first decades since the emergence of ITO practice. Similar to the lifecycle of ITO practice as illustrated in Figure 3, research attention had been shifted from the initial decision process to post-adoption implementation issues. By the end of last millennium, researchers had started to scrutinize the client-supplier relationship beyond the scope of outsourcing contract, including the psychological aspect of relations. A major contribution of this extensive literature review is the five research gaps identified by the authors, encouraging future research on (1) outsourcing success, (2) from vendors' perspective, (3) on the client-vendor relationship, (4) on outsourcing process, and (5) with comparative methods. Today, some of the gaps have been bridged, e.g. the vendors' perspective has been widely addressed, yet many of the gaps are still valid up to date. This will be presented in the subsequent introduction of other literature reviews. Future studies were also called for on several sourcing issues emerged in ITO practice during the first decade. Driving the change of research attention, the focus of outsourcing shifted from cost-saving to management consideration, such as to re-focus on core business. Meanwhile, the relationship between client and vendor increasingly evolved from "buyer" and "supplier" into alliances and partnerships. Moreover, different types of

outsourcing, including equity holding, offshoring, and Application Service Providing (ASP) were on the rise. In addition, due to the inconsistency of “hope” and “reality”, i.e. the initial purpose and the outcome of ITO practice, back-sourcing became a key trend on the reverse direction of outsourcing. These emerging issues have been extensively addressed during the years following the publication of this literature review; however, many of them are still highly relevant topics for new ITO research.

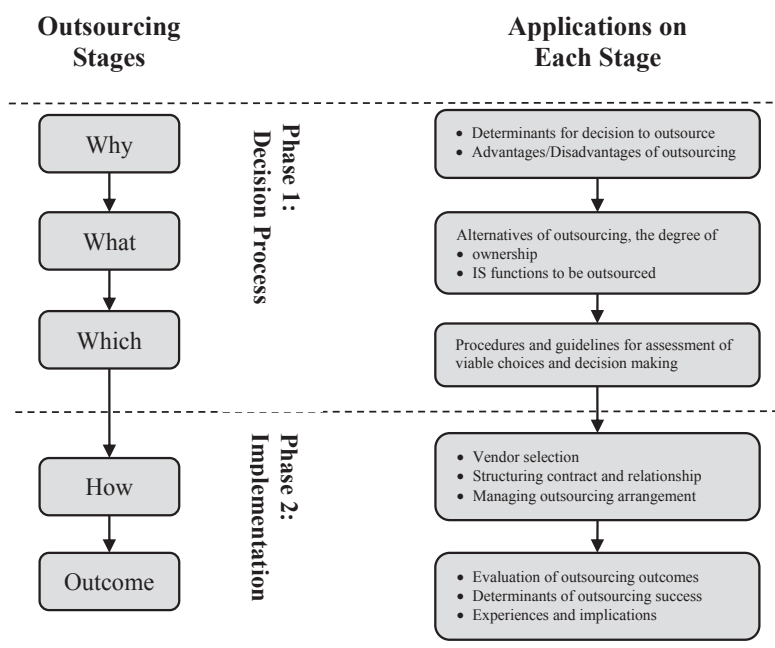


Figure 3 Stages of outsourcing (Dibbern et al., 2004)

Another literature review was conducted (Gonzalez et al., 2006) almost immediately following Dibbern et al. (2004). Compared to the latter, this review involves more studies, especially those published after the millennium (see Table 1). They also identify one article written in 1988, but the term “facility management” was used instead of “outsourcing”. This dates back the research on outsourcing even before the “Kodak effect”. However, most of the articles indeed have emerged after 1989, and the proliferation of literature has especially accelerated since 2000. Methodologically, the analysis shows a clearly increasing popularity of empirical studies over time. This is consistent with Dibbern et al.’s (2004) assertion that the research of ITO is highly practice-oriented, and that theories pertaining to the field have been constantly developed and/or tested with empirical data. The authors categorize the most frequently researched topics into multiple perspectives to outsourcing (Figure 4), including the perspective of client, of the provider, of the relationship, of economic theories, and others. Among all

the perspectives, the client view still dominated this research field at that time, though a decrease of the research attention was observed. On the other way round, the number of articles from provider's perspective had grown rapidly since 2001. This shows the active reaction of the research community mobilized by Dibbern et al.'s (2004) call for more attention on the vendor's perspective. In addition, the authors attribute increased application of economic theories, as well as the tendency towards co-authorship, to the growing maturity of the research area, which is also consistent with the previous literature review (Dibbern et al., 2004). The authors have also traced the evolution of both classic and emerging topics with a longitudinal view (Figure 5). Over time, classic topics such as reasons for outsourcing and the general view of ITO phenomenon, although still topped the list with article numbers in total, became less discussed for that time being. Instead, the topics on client-vendor relationship had raised much more interest after 2001, addressing the related research gap and emerging trends suggested by Dibbern et al. (2004), i.e. research gap on client and vendor relationship and trend for the growth of alliances and partnerships. It is also worth noticing that new phenomena such as ASP and offshoring were paid significant attention, still in line with the emerging trends forecasted by Dibbern et al. (2004). Another interesting finding is that most of the analysed articles (77.1%) have neglected the scope of outsourcing, i.e. how much and which part of IT function is outsourced, only discussing ITO in general. This indicates that the "IT" part of "ITO" had been, to certain extent, overlooked by researchers at that time (see Orlikowski & Iacono, 2001).

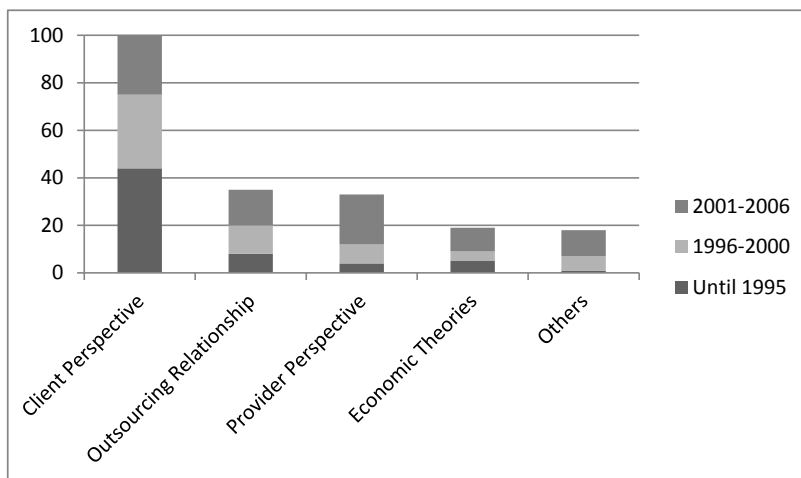


Figure 4 Multiple perspectives to outsourcing (Adapted from Gonzalez et al., 2006)

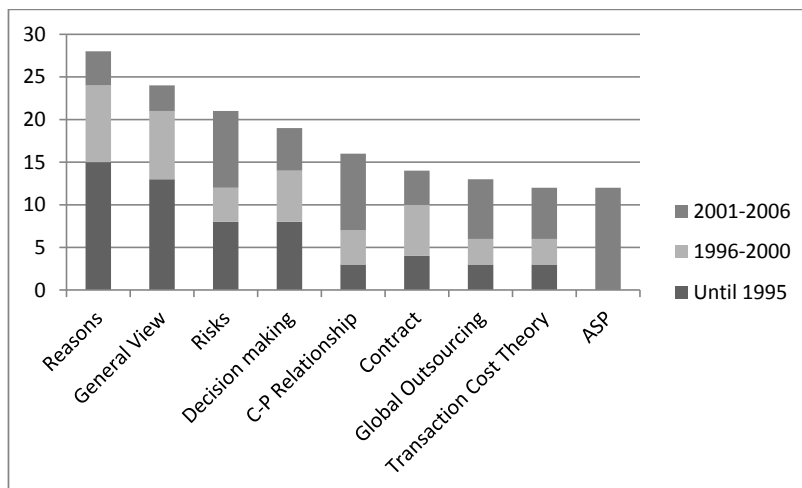


Figure 5 The most frequent ITO topics (Adapted from Gonzalez et al., 2006)

To address the practice-oriented nature of ITO research, Lacity, Khan, and Willcocks' (2009) review summarized the insights for key questions concerned by practitioners on six main topics (see Table 1). Corresponding to the historical development of ITO research, the first three topics, including (1) attributes of firms most likely to engage in ITO, (2) intent and effects of ITO strategy, and (3) ITO risks and mitigation, are more prevalent to the research focus in early 1990s; and the next three topics have been initiated since mid-1990s and developed through the late 2000s, focusing on (4) success determinants, (5) client and supplier capabilities, as well as (6) various types of outsourcing. This evolution of research topics is mostly consistent with Gonzalez et al.'s (2006) observation, while the topics pertaining to ITO success complement this previous review and show the effort to address the related research gap identified by Dibbern et al. (2004) with the highest number of articles. Three interactive determinants categories are found to be significant to affect the success of ITO, respectively ITO decision, contractual governance and relational governance; in turn, ITO success also leads to enhanced ITO decisions and governance (Figure 6). It provides evidence for the strategic importance of governance for higher level of ITO success, as well as a rich illustration for the complex interactions among the decision, governance and success of ITO. Meanwhile, the topic of organizational capabilities, involving both client and supplier capabilities, also pertains to ITO success. Based on prior seminal works, the authors suggest a mix of complementary capabilities leading to success. In addition, the authors also argue that previous experience, as an important part of organizational capability, is the best leverage to mitigate ITO risks. This is to say, the learning curve effects are vital and cannot be bypassed. This resonates with Dibbern et al. (2004) that called for more research to trace changes throughout the process of ITO, so that different learning curves of

organizations can be uncovered. However, despite Dibbern et al.'s (2004) forecast that the focus of ITO would shift to management intents, the authors assert that from practitioners' perspective cost saving was still the most significant strategic intent of outsourcing, and the pursuit for strategic exploitation of ITO remained with lower priority. The authors also conclude with the persistent importance of ITO governance, which have been an issue challenging both practitioners and researchers for nearly 20 years.

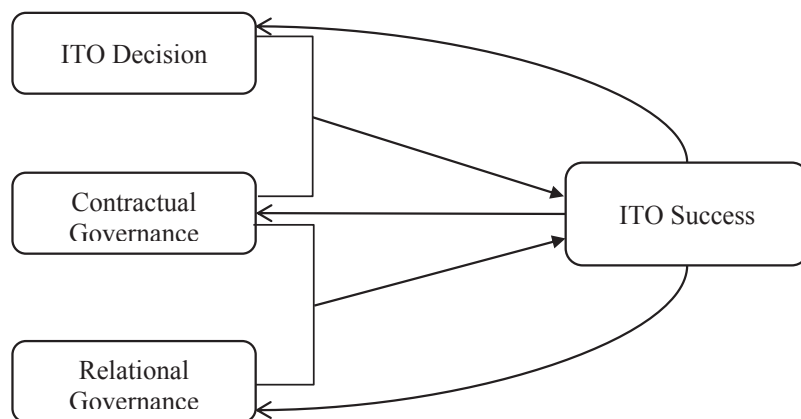


Figure 6 Interactions among ITO success and its determinants (Lacity et al., 2009)

Most recently, Lacity, Khan, Yan, and Willcocks (2010) reviewed 164 empirical papers on ITO published during 1992-2010, extending the timeline of Dibbern et al.'s (2004) review for literally ten years. Based on the data, they developed two ITO models connecting the categories of pertinent independent and dependent variables out of literature: a model of ITO decisions, and another of ITO outcomes. These two interrelated models, as depicted in Figure 7, have concisely summarized two decades of ITO research. Both ITO decisions and outcomes involve various dependent variables. The three most frequently researched dependent variables on ITO decisions are respectively the decision of "make-or-buy" (i.e. insource or outsource), the decision of outsourcing locations (i.e. offshore or onshore), and the decision of contract types. The category of ITO outcomes involve more dependent variables, but the most popular variables are relatively concentrated, including the client's perception on ITO success both onshore and offshore, relationship quality, the performance of business, project and IS out of ITO, etc. The authors also show the evolution of both ITO decisions and ITO outcomes over time, with clear evidence that former category dominates

early ITO studies in the 1990s while the latter enjoys a trend of increased research attention since the millennium.

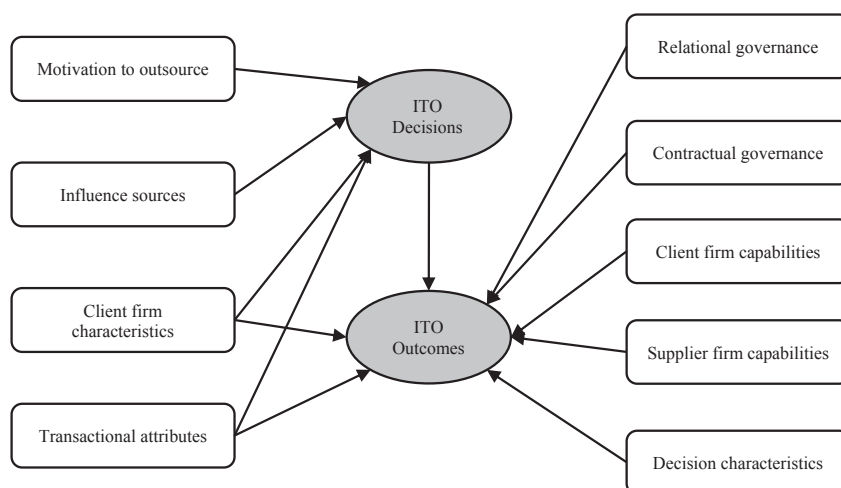


Figure 7 Models of ITO decisions and outcomes (Lacity et al., 2010)

Figure 7 has integrated the two models due to the over-lapping elements in both models, showing the major relationships between the broad categories of dependent and independent variables. The most important determinants of ITO decisions are categorized as motivation to outsource, influence sources, client firm characteristics, and transaction attributes, among which two categories (i.e. client firm characteristics and transactional attributes) also include independent variables for ITO outcomes. Moreover, one variable in the category of ITO decision (i.e. the “make-or-buy” decision) serves as another determinant for ITO outcome. Additionally, the categories of relational and contractual governance, client and supplier firm capabilities, and decision characteristics also involve pertinent independent variables for ITO outcomes. Looking back at the evolution of both models, these interrelations have provided evidence that studies on the increasingly more attractive topics of ITO outcome has well rooted in the early studies on ITO decision, while still expanding into new research territories by exploring new determinants and relationships. Besides relationships between dependent and independent variables, the authors also acknowledge the significance to examine interactions among different categories of independent variables. According to the authors’ analysis of literature, the two most important relations are identified as between ITO decision and contractual governance, and between contractual and relational governance. It is highlighted that superior ITO outcomes are observed when ITO decision is matched with appropriate contractual governance; meanwhile, the interaction between contractual governance and

relational governance is complimentary rather than substitutive. Consistent with Lacity et al. (2009), the learning curve effects are also stressed here, with which the authors criticize Transaction Cost Economics (TCE) with limitations of overlooking the effect of past ITO experiences on the future ITO activities.

As concluded in Lacity et al. (2010), the research gaps identified by Dibbern et al. (2004) have been well addressed by researchers during the decade after millennium. However, new challenges and research gaps also emerge over time. The authors call for more studies on several areas that lack research attention, including strategic ITO decisions and outcomes, interactions between ITO and firm capabilities, environment effects on ITO, the combination of multiple factors for ITO success, new offshoring destinations, and new models and emerging trends. Furthermore, theoretical development is underscored for future studies. On one hand, the prevailing application of theories from other disciplines (e.g. economic, strategic, and organizational theories) in the field of ITO can also inform and enrich the content of referenced theory; on the other hand, the field has been maturing to such a proper stage that indigenous theories of ITO, which are still lacking, need to be developed at a higher priority.

2.2 ITO governance

The conceptualization of ITO governance initially derives from the understandings of IT governance. Weill's (2004) definition of IT governance, "*the framework for decision rights and accountabilities to encourage desirable behaviour in the use of IT*" (p.3), has been widely adopted to define ITO governance as well. Actually, in early studies, ITO itself was regarded as a new option of IT governance, which externalizes the scope of governing IT from internal organization to external vendors on the market (Loh & Venkatraman, 1992). Such atomistic view focuses on different entities involved in the ITO relationship, and examines ITO governance from either client or vendor perspective (Gonzalez et al., 2006). The client perspective often focuses on the sourcing decisions; either on how to choose between two options of governing IT, i.e. insourcing or outsourcing, (Cronk & Sharp, 1995), or on the rationale of such decisions (Grover, Cheon, & Teng, 1994a). Some advices to outsourcing clients also pertains to the strategy for successfully governed relationships (Lee, Miranda, & Kim, 2004). From the vendor's perspective, studies are conducted on vendor's competencies of governing IT which creates value for clients and also enables vendors to obtain economic benefits (e.g. Levina & Ross, 2003).

Following the growing maturity and experience of ITO in practice, research on ITO governance has also developed with an expanded and more holistic view,

departing from the traditional atomistic view borrowed from IT governance. This is manifested in the evolving definition of ITO governance, which now focuses more on the relationship and alignment of all involved parties. For example, Oshri, Kotlarsky, and Willcocks (2015) define the governance of outsourcing as “*the processes and structures that ensure the alignment of the strategies and objectives of the parties involved*” (p.239). Tracing the conceptualization and research progress on ITO governance, we have conducted a literature review (Lin & Vaia 2015) which reveals two research strands on this topic: governance structure and governance mechanisms.

2.2.1 Governance structure

Mani, Barua, and Whinston’s (2010) define governance structure as “*the ownership and control structure used to formalize the relationship, and distinguish among these structures by the level of hierarchical control, length, and extent of formalization*” (p.44-45). This definition has well reflected the shift in ITO governance research to a holistic approach and relational focus. Corresponding to the theoretical foundations of ITO as a general topic, understandings on governance structure in particular are also strongly rooted from Transaction Cost Economics (TCE). This theoretical root is manifested in multiple synonyms for “*governance structure*”, e.g. “*governance forms*” and “*governance modes*”, which are originally conceptualized in classic TCE literature by Williamson (Williamson, 1975, 1979, 1986, 1994).

Prior literature has addressed three types of governance structure: market, hierarchy, and network. However, understandings and definitions on these three types vary among different scholars and research fields (Adler, 2001; Miranda & Kavan, 2005; Powell, 1990). In ITO research, the understanding on typologies of governance structure has also evolved over time. In early years, the choice between the “market or hierarchy” dichotomy is considered within the “make or buy” decision, on the basis of transactional properties including asset specificity, frequency and uncertainty. Typically, market governance is attributed to the option of “outsourcing” where the locus of governance extends to external organizations; whereas hierarchy governance is related to “insourcing” where the original hierarchy of IT governance is preserved (see e.g. Cronk & Sharp, 1995). Following TCE, scholars recognize that the option of market governance (i.e. outsourcing) will lower production cost but raise transaction cost; vice versa, opting for hierarchy governance (i.e. insourcing) will probably lower transaction cost but result in higher production cost (Alaghehband, Rivard, Wu, & Goyette, 2011; Cheon, Grover, & Teng, 1995; Wang, 2002; Watjatrakul, 2005). Meanwhile, governance structures of “market” or “hierarchy” has been discussed under other

theoretical context as well, such as Agency Cost Theory (ACT) and Resource-Based Theory (RBT) (Cheon et al., 1995; Grover, Cheon, & Teng, 1994b); while incorporating alternative criteria, these studies also focus on the consistency of structural choices with “make or buy” decision. Although defining such pure structures of market and hierarchy is beneficial for theoretical development, it rarely exists in practice. Therefore, other scholars have criticized this dichotomous view by emphasizing the intertwined elements from both structures (De Looft, 1995), and introducing a third option of “*mixed-governance*” between the two choices (Aubert, Houde, Patry, & Rivard, 2012). Despite having extended the dichotomous view of governance structure, these studies still perceive ITO as a particular governance structure of vertical disintegration, differing from the holistic view regarding ITO relationship as an entity.

As outsourcing is increasingly becoming an indispensable option for firms to manage IT, both researchers’ and practitioners’ attention has shifted from the initial “make or buy” decision to the maintenance of successful ITO relationships. The holistic approach to study ITO has then emerged regarding all parties in ITO as part of an integrated entity, differing from the prior view of vertical disintegration with “internal vs. external” dichotomy. This approach is reflected by the introduction of “network governance” into ITO research as a new governance structure besides the dichotomy of “market” and “hierarchy”, incorporating all participant organizations into a holistic network. The new definitions of these three types of governance structure are succinctly synthesized by Miranda and Kavan (2005) particularly for the context of ITO: “*the market is an institutionally derived and transaction – or contract-based governance form; the hierarchy is an institutionally derived authority-based form; the network is a socially-derived informal form*” (p.153). As manifested by this definition, the perspective on governance structure has transformed from either client or vendor’s view to the level of integrated ITO relationship. Moreover, all the three governance structures under the holistic view represent options for ITO, in contrast from the traditional view in which ITO itself is just one of the structural options of governance. Furthermore, appropriate fit is needed between ITO strategy and the type of governance structure. According to Lee et al. (2004), three gestalts of ITO strategy, i.e. arm’s length, independent, and embedded, respectively correspond to the market, hierarchy and network types of governance structure. It is also argued that as governance structure becomes more integrated from market to hierarchy, and finally to network, the relational strength in the ITO strategy will also correspondingly increase. In addition to ITO strategy, different types of governance structure can be adopted in different stages of outsourcing. In Miranda and Kavan’s (2005) Moments of Governance (MoG) model, market and hierarchy are inscribed into the alternative structures on the stage of promissory contract, when ITO decision process occurs; whereas hierarchy and network governance are

considered as viable options on the stage of psychological contract, during the post-adoption maintenance of ITO relationship.

2.2.2 Governance mechanisms

While a certain governance structure defines the overall shape of ITO governance, here governance mechanisms are defined as a set of embodied “tools” to ensure the realization of governance (Lin & Vaia, 2015). Prior ITO literature has identified two inter-related categories of governance mechanisms, namely contractual governance and relational governance (Huber, Fischer, Dibbern, & Hirschheim, 2013; Lioliou, Zimmermann, Willcocks, & Gao, 2014; Poppo & Zenger, 2002), which are both identified as important constructs categories in the theory building for ITO (Lacity, Willcocks, & Khan, 2011). Mainly three governance mechanisms have been discussed in the prior literature: contract (Y. Chen & Bharadwaj, 2009; Kim, Shin, & Lee, 2013; Koh et al., 2004; Mani, Barua, & Whinston, 2013), control (Choudhury & Sabherwal, 2003; Srivastava & Teo, 2012), and the supporting Information System (IS) (Mani, Barua, & Whinston, 2006). Based on a review of prior literature (Lin & Vaia, 2015), this study identifies the distinction between the categories of contractual and relational governance by the properties of these mechanisms (Table 2).

Table 2 Contractual governance and relational governance

<i>Governance mechanisms</i>	<i>Contractual Governance</i>	<i>Relational Governance</i>
Contract	Promissory contract	Psychological contract
Control	Formal control	Informal control
Supporting IS	Process-oriented design	Agility-oriented design

The properties of contract mechanism are differentiated as promissory and psychological contracts (Miranda & Kavan, 2005). Promissory contract refers to the formally specified legal contract with detailed stipulation on obligations of contractual parties (Rousseau & Parks, 1993). Prior ITO research on promissory contract has studied the choice of contractual structure and the consequence of such choices. The choice of contractual structure, either as fixed-price (FP) or on the basis of time and material (TM) (Gopal, Sivaramakrishnan, Krishnan, & Mukhopadhyay, 2003), will contextualize different effects of governance provisions, such as transaction characteristics (Y. Chen & Bharadwaj, 2009), business familiarity (Gefen et al., 2008), information structure (Mani, Barua, & Whinston, 2012), etc. Beyond the choice of an optimal contractual structure, different structures can also be combined to optimize their impact on ITO (Bhattacharya, Gupta, & Hasija, 2014). Meanwhile, the consequence of different

contractual choices needs to be evaluated. For example, the fluctuation of equity price can be used as an indicator of such consequence, as the rise or fall of share value is related with the fit of contract choices with the relationship property and outsourced tasks (Mani et al., 2013). Contrary to promissory contract, the terms and conditions on the mutual obligations in psychological contract is based on the psychological beliefs, rather than specified legal terms, of the exchange parties (Koh et al., 2004; Rousseau & Parks, 1993). First introduced by Koh et al. (2004) into ITO research, the notion of psychological contract has been used as an effective lens to study ITO relationships, as it focuses on people's beliefs of obligation in their mutual exchange. On one hand, the psychological contract on individual level can impact the overall ITO success on the relationship level (Koh et al., 2004); on the other hand, the breach of psychological contract will in turn mediate the effect of promissory contract on the performance of governance (Kim et al., 2013). Actually, promissory contract and psychological contract are not isolated under different ITO contexts; instead, these two mechanisms can coexist with substitutive effect to each other (Lioliou et al., 2014).

Besides contract, the control mechanisms are recognized as essential for ITO governance (Choudhury & Sabherwal, 2003). Two modes of controls, formal and informal, have been used to govern ITO in different contexts (Choudhury & Sabherwal, 2003; Lacity et al., 2011; Tiwana, 2010), which can be further categorized into four mechanisms: outcome control and behaviour control as two formal mechanisms, and self-control and clan control as two informal mechanisms (Choudhury & Sabherwal, 2003). During the course of software development outsourcing, outcome control prevails in the starting phase of projects, whereas the later stage is dominated by behaviour control. These two control mechanisms heavily rely on the formal promissory contract for specification and monitoring. A typical example of such formal mode of control mechanism is the "mechanistic governance" introduced by Srivastava and Teo (2012) in the context of offshore outsourcing. In this particular mechanism, both outcome and behaviour controls are realized through close reference to the formal contract, and no deviations are allowed "*from the pre-specified outcomes and procedures*" (p.118). While the effectiveness of this control mechanism is confirmed in the offshoring scenario, its effect is not elaborated in other contexts. Unlike formal control, informal control is realized through relational means rather than formal stipulation. However, the mode of informal control is also tightly connected to informal control. For instance, self-control can be mobilized through the effect of behaviour control (Choudhury & Sabherwal, 2003). As to clan control, it is found to be harder to establish in ITO (Choudhury & Sabherwal, 2003), or even likely to cause reduced project efficiency in certain context of software development outsourcing (Gopal & Gosain, 2010). However, as an antecedent of clan control (Kirsch, Ko, & Haney, 2009), the notion of trust has been recognized as important in ITO relationships.

Consensus can be observed that trust is the basis for informal control (Fink, 2010; Sabherwal, 1999; Tiwana, 2010); meanwhile, it is also argued that trust is a complementary mechanism to formal controls (Heiskanen, Newman, & Eklin, 2008). In effect, contract-based formal controls and trust-based informal controls can simultaneously complement and substitute to each other, thus are compatible to coexist (Tiwana, 2010). The positive influence of informal controls in general has been confirmed to enforce the relationship quality (Fink, 2010); though some contradicting findings are also observed (Gopal & Gosain, 2010), which calls for deeper understandings on the informal control mechanisms. On the implementation of informal controls, Chua, Lim, Soh, & Sia (2012) explored the enactment of clan control. Although their study is based on complex IT projects, the findings can also imply to different situations in ITO contexts.

Besides contract and control, the governance mechanism, in form of an effective supporting IS, is often overlooked in the prior literature. Such IS is another essential “tool” to embody and realize ITO governance, especially for the coordination among different parties. As today’s ITO relationships often involve firms with geographically dispersed teams, the level of information exchange for governance will be significantly affected by the supporting system. Thus we perceive it as another type of governance mechanisms, together with contract and control mechanisms (see Table 2). For effective governance, the system design needs to be in line with other governance mechanisms, i.e. type of contract and the depth of relational influence in control (Mani et al., 2006). For instance, to govern ITO relationships with formal mechanisms of contract and control, the system design tends to be process-oriented, relying on a series of strict work processes defined by the corresponding contract; in contrary, with the demand of intensive interaction in relationships featuring psychological contract and informal control, the system will be desired more as agility-oriented, with heavy reliance on informal communication and collaboration channels.

Table 2 shows the configurations of different properties in contract, control and supporting IS into the categories of contractual and relational governance, which are both recognized as important constructs for building an endogenous ITO theory (Lacity et al., 2011). However, this categorization of governance mechanisms defines only the ideal situation with extreme configurations, where contractual governance involve only formal mechanisms and relational governance is purely realized through informal mechanisms. In effect, the boundary between contractual and relational governance is not a straightforward line but rather blurred; meanwhile, their interrelations are salient, manifested by scholars’ debates on the complementarity and/or substitution between these two categories (Goo, Kishore, Rao, & Nam, 2009; Huber et al., 2013; Lioliou et al., 2014; Poppo & Zenger, 2002). For instance, already in an early study of ITO research, Clark, Zmud, and McCray (1995) noted that “*Those happiest with their current*

outsourcing arrangements were those with a limited set of tightly defined contractual elements with a larger portion of the relationship handled through joint agreements consisting of broader performance objectives and appropriate governance mechanisms” (p.233). This quote illustrates the co-existence of both contractual and relational governance in practice. On one hand, in this particular configuration, tightly defined contractual terms, together with formal document-based controls, do exist, though they are used to a limited extent; on the other hand, psychological contract and informal control mechanisms are emphasized in “*a larger portion of the relationship*”, yet still not for the entire relationship. For the sake of theoretical distinction and parsimony, we still keep the two ideal extremities in Table 2, but use dotted line between contractual and relational governance.

2.2.3 *Aligning governance mechanisms with governance structure*

As discussed in sections 2.1.1 and 2.1.2, governance structure is the framework shaping the ITO governance, differentiated as market, hierarchy and network; whereas governance mechanisms refer to the embodied means through which governance is realized, including contract, control and the supporting IS. Indeed, the structure and mechanisms, though studied mostly in separation in prior literature, are complementary aspects of governance. Therefore, an integrated framework is needed involving both aspects for a comprehensive understanding of ITO governance.

In their MoG model, Miranda and Kavan (2005) proposed to circumscribe different governance forms¹ into two stages of contract mechanisms: promissory contract and psychological contract. They argue that promissory contract can be adopted under market and/or hierarchy governance for arm’s length relationships; while only hierarchy and network governance can accommodate psychological contract for embedded relationships. The MoG model offers the starting point for my study by aligning contrasting characteristics of contract mechanism with different governance structures. As mentioned in the last section, governance mechanisms involve controls and the supporting IS as well, which also need to be mapped into different structures.

The mechanism of control is tightly related with contract. On one hand, contract stipulates the rules and benchmarks to be followed during the governance, either in form of formal documents, or within the psychological beliefs of participants; on the other hand, control, by means of formal or informal mechanisms, embodies the practices to ensure the execution of contract. Formal controls, including

¹ In this study, my understanding of governance structure is in line with Miranda and Kavan’s (2005) definition of governance forms, including market, hierarchy and network.

behaviour control and outcome control, are indeed carried out on the basis of rules and benchmarks stipulated “on paper”. Similar to the mechanism of promissory contract, formal controls also characterize the market structure of governance, where control is externalized and based on promissory contract. As an authority-based structure, hierarchy governance can emerge at both moments of promissory contract and psychological contract (Miranda & Kavan, 2005). Similarly, in hierarchy structure, control is internalized, to a certain extent, by promoting more extended participation compared to the market structure, thus facilitating the informal forms of self-control and clan control; whereas the formal controls for outcome and behaviour are still present in the established hierarchy, which are still stipulated by formal contract. Therefore, hierarchy structure embraces both formal and informal controls. The network structure, by definition, is constructed upon extensive social interactions and trust-based relations (Adler, 2001). It is the most integrative structure among all the parties, in which governance is enacted through psychological contract, and controls are dominated by informal mechanisms (i.e. self-control and clan control). As to the supporting IS, its alignment with other governance mechanisms has been discussed in the section 2.2.2. Thus following the corresponding contract and control mechanisms, the systems with process-oriented design can support market structure, while those with agility-oriented design are more suitable for network structure. Again, in hierarchy structure, both designs can be optional candidates of the supporting IS, and the final selection would depend on the context of each case.

In summary, Table 3 shows the alignment of governance mechanisms and governance structure by mapping different mechanisms of contractual and relational governance under the three types of governance structure. Consistent with Table 2, the dotted line is used here to avoid absolute separation between the two categories of governance mechanisms; furthermore, the arrows under the three types of structures re-emphasize the alignment of different mechanisms as a continuum from market, to hierarchy and eventually to network. Naturally, in practice, different governance structures may overlap with each other; more often than not, the portfolio of different mechanisms in both contractual and relational governance will be mixed under a certain governance structure. Here it is worth noticing that this study will only focus on the latter two governance structures, i.e. hierarchy and network. Because in the chosen research setting of post-adoption stage ITO, market is not an option of governance structure any more (Miranda & Kavan, 2005).

Table 3 Aligning governance mechanisms and governance structure

	Governance structure	
	Market ←	Hierarchy →
Governance mechanisms	<u>Contractual Governance</u>	<u>Relational Governance</u>
Contract	<i>Promissory contract</i>	<i>Psychological contract</i>
Control	<i>Formal control</i>	<i>Informal control</i>
Supporting IS	<i>Process-oriented design</i>	<i>Agility-oriented design</i>

2.3 The governance of IT multi-sourcing

In recent years' ITO practice, multi-sourcing, defined as a type of outsourcing practices “*stitching together best-of-breed IT services*” from multiple vendors (Bapna, Barua, Mani, & Mehra, 2010, p.785), has become a significant pushing force for the future growth of global ITO (ISG, 2014; Oshri et al., 2015). This definition implies several key characteristics of multi-sourcing. First, unlike the traditional dyadic client-vendor relationship in ITO, the multi-sourcing relationship is “one-to-many”, typically involving a single client and multiple vendors (Dibbern et al., 2004; Plugge & Janssen, 2014). Second, these vendors need to collaborate in the outsourced tasks, which can then be “stitched together” by the client. Hence in multi-sourcing, compared to dyadic outsourcing, additional capabilities are not only needed from the vendors on collaborating with each other, but also from the client who must be able to manage and integrate the delivered services from different vendors (Bapna et al., 2010; Lempinen & Rajala, 2014; Oshri et al., 2015). Last but not least, the objective of multi-sourcing is to obtain an integrated “best-of-breed IT services” with increased benefits for the client compared to dyadic ITO, such as higher quality and less risks (Currie, 1998; Levina & Su, 2008).

Despite the recognized importance of multi-sourcing both in research and in practice, our understanding on this novel phenomenon is still limited (Wiener & Saunders, 2014), since most of theoretical insights on ITO derive from dyadic client-vendor relationships. As implied by the definition, besides the perceived benefits, new challenges are also posed to scholars and practitioners on multi-sourcing due to the new features of multi-sourcing. On one hand, complexity arise from the increased number of parties in the relationship (Fridgen & Mueller, 2011; Levina & Su, 2008) which might raise management cost as well as demand higher management capability from the client. On the other hand, in addition to client-vendor relationships, vendor-vendor relationship also becomes salient as different

vendors have to collaborate despite being competitors, in order to achieve the client's business goal. Corresponding to such research opportunities, different aspects of multi-sourcing have been addressed in recent studies, such as the rationale behind the choice for multi-sourcing (Bapna et al., 2013), decision on vendor portfolio (Fridgen & Mueller, 2011), vendor-vendor knowledge transfer (Schott, 2011), mindful management practices (Beck et al., 2011), and so on. In this study, I focus on the governance aspect of multi-sourcing to address the challenges faced by both client and vendor. In the next sub-sections, different multi-sourcing models are reviewed from prior literature, in order to contextualize ITO governance into the multi-sourcing scenario.

2.3.1 Multi-sourcing models

Prior literature has provided rich examples of various multi-sourcing deals in practice, among which two basic models of vendor structures are identified: (1) direct model and (2) mediated model (Wiener & Saunders, 2014).

Direct model refers to the multi-sourcing arrangements in which the client directly interacts with each vendor. The widely recognized ITO landmark deal, between Kodak and its three vendors in 1989 (Applegate & Montealegre, 1991), applies such direct model. In this influential outsourcing decision, Kodak outsourced the data centre operations to IBM, telecommunications and network services to DEC, and the personal computer support to Business Land. As shown in Figure 8, the vendors are dedicated to separate responsible areas in this multi-sourcing structure, managed directly by the client. As little task overlapping is in place, and the interdependency among vendors are low, I characterize such vendor structure as *multi-vendor outsourcing*, which differs from dyadic outsourcing relationships simply by the increased number of direct vendors.

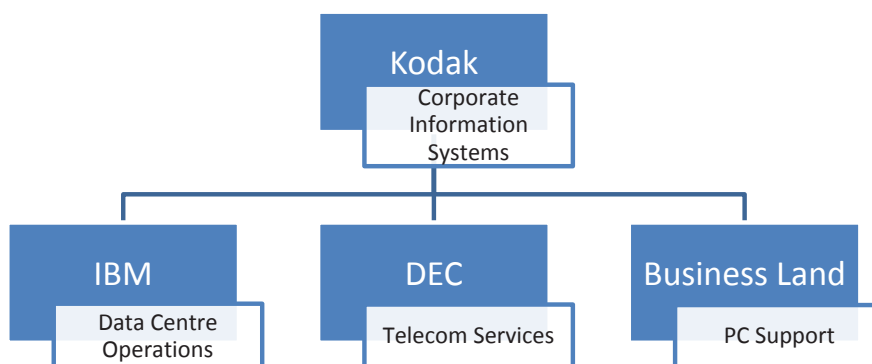


Figure 8 Multi-vendor outsourcing: The Kodak case

Some scholars argue that a differentiating feature of multi-sourcing is the high interdependency among vendor tasks (Bapna et al., 2010; Oshri et al., 2015); thus for them, conventional multi-vendor outsourcing, such as the Kodak case, cannot be qualified as multi-sourcing. In this sense, the outsourcing approach of British Petroleum (BP) in 1993 is featured with high vendor interdependencies and direct client-vendor interface, hence can appropriately exemplify the direct model of multi-sourcing. Similar to Kodak case, BP also involved three different vendors: Sema Group, Synchrondia, and SAIC; but instead of assigning disparate tasks to them, they require all the vendors to work together towards integrated IT services, and to deliver the combined tasks seamlessly. The cornerstone of this strategy is underlined as “multiple IT suppliers that act as one” (Cross, 1995, p.95), in which the client manage multiple vendors directly, yet receive integrated services from a combined interface depending on the responsible areas of each vendor (Figure 9). For instance, if an incident occurs in the area of IT facilities which belongs to SAIC’s responsibility, even if the problem actually lies in Synchrondia’s network infrastructure or Sema Group’s data centre, SAIC is expected to coordinate the work and be the single point of contact in charge of the final solution. If attention is needed in the area of data centres, Sema Group will become the main contact instead; same applies to Synchrondia in the area of network infrastructure. Due to the task interdependency and required single interface, in this case, vendors have to collaborate closely together and cannot pass responsibilities to each other; however, there is no single vendor that is appointed as the “guardian”, and the client, in effect, still manages the vendors directly despite the integrated interface. This structure is similar to the “direct-overlapping” model identified by Wiener and Saunders (2014), where the vendors have overlapped responsibilities and are forced to cooperate with each other.

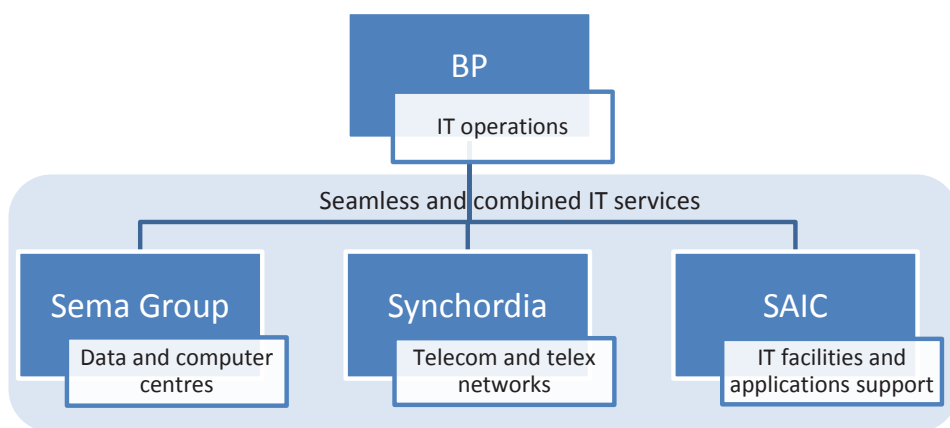


Figure 9 “Multiple IT suppliers that act as one”: The BP case (Cross, 1995)

Mediated model is also often referred to as “*guardian vendor model*” (e.g. Bapna et al., 2010). As suggested by the name, this model relies on an intermediate party, usually one of the vendors, to coordinate other vendors on behalf of the client. In the context of offshoring, Olsson, Conchúir, Ågerfalk, and Fitzgerald (2008) has introduced a *two-stage offshoring* model adopted by multinational companies, with their Irish captive sites as mediating “bridges” between the US headquarter and the far-shore captive unit in India. One of the cases in their study, the Pennysoft case, is illustrated in Figure 10, in which different tasks are assigned in different sites of the same multinational company. Due to the favourable temporal location, the Irish site becomes the bridge in this two-stage model of offshoring, who then experiences both perspectives of client and vendor in this offshoring relationship. Similarly, Mahnke, Wareham, and Bjorn-Anderson (2008) also studied the intermediary capabilities of such offshore middlemen, which bridges the cultural and cognitive distances, and render supports in both pre-contractual preparation and post-contractual operations. Although these studies focus on offshoring rather than multi-sourcing, they have generated valuable understandings on the basic mechanism of mediating and the role of guardian vendor for our mediated model of multi-sourcing.



Figure 10 Two-stage offshoring: The Pennysoft case (Olsson et al., 2008)

Shell’s multi-sourcing decision on its IT infrastructure (Chapman, 2008) is a typical example of mediated model adopted in a multi-sourcing scenario. As shown in Figure 11, complementary parts of infrastructure services were provided by three different vendors: network and telecommunication by AT&T, hosting and storage by T-Systems, and end-user computing by Electronic Data Systems (EDS). In addition to its dedicated area of end-user services, EDS is also selected as the guardian vendor to integrate the infrastructure services provided by all the vendors. Therefore, in this case, the responsibilities of EDS are similar to those of the captive Irish site in the Pennysoft case. On one hand, both the Irish site and EDS have their own operational tasks assigned by the headquarter/the client; on the other hand, both of them also take over the coordination work with other vendor(s) on behalf of the headquarter/the client. Differing from the BP case, the guardian

vendor in Shell's arrangement is pre-assigned instead of task-based; thus Shell can rely on EDS as a "real" single point of contact for any responsible areas in the scope of all the outsourced vendor tasks.

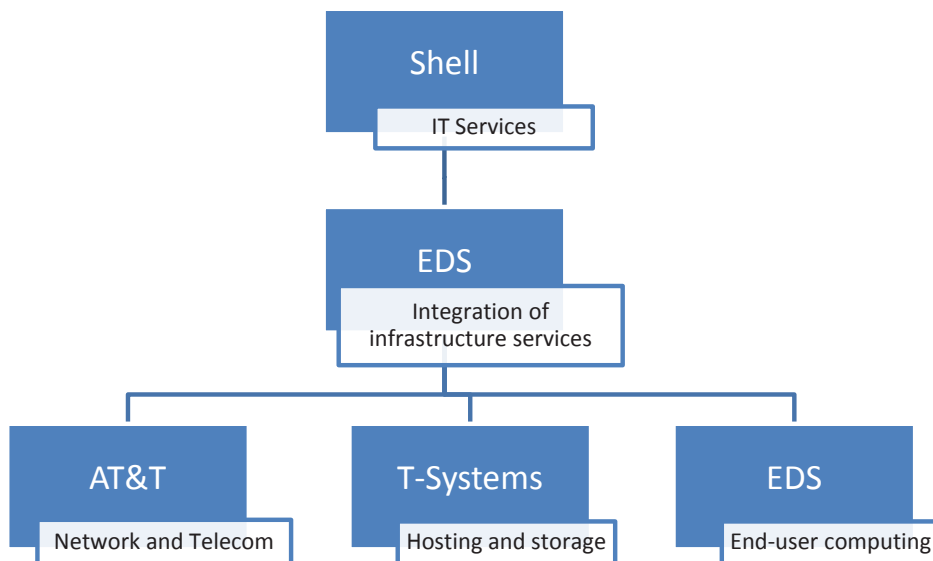


Figure 11 Guardian vendor multi-sourcing: The Shell case (Chapman, 2008)

Another example of the mediated model is the South Australian Water (SA Water) case presented by Thorogood, Yetton, Vlastic, and Spiller (2004) (Figure 12). In contrast to Shell's strategy of outsourcing the entire IT infrastructure, SA Water adopted selective outsourcing, in which they only sought for IT skills and advices from external vendors, while still keep business related tasks such as IT risk management to the IS department in house. To manage such complex scenario involving multiple parties both internal and external, they opted for a strategic broker model. In this model, the CIO is positioned as broker of IT services pooling talents and task focuses from all available resources. Meanwhile, the organization of Corporate Information System is also shifted from centralised to role-based; multiple organisational styles of different parties are integrated to carry out complementary IS tasks in synergy. In this case, the CIO takes over the mediating role to manage the portfolio of role-based tasks from both internal IS department and external service vendors. Differing from the Shell case, here the "guardian vendor" is an individual, the CIO, who is employed by the client firm; moreover, the service providers are not only external vendors but also internal staff to the client. Some scholars have defined such sourcing mode as plural sourcing (Krzeminska, Hoetker, & Mellewigt, 2013; Puranam, Gulati, & Bhattacharya,

2013), where firm both “make” and “buy” service. However, as by definition, multi-sourcing acquires IT services from multiple interdependent parties; this form of sourcing can also fall into the realm of multi-sourcing, and render insights for multi-sourcing research. Furthermore, the CIO in this case can indeed be perceived as the guardian vendor, considering his mediating role and responsibilities on alignment. Therefore, the broker model of SA Water case can be seen as a special instance of mediated model multi-sourcing.

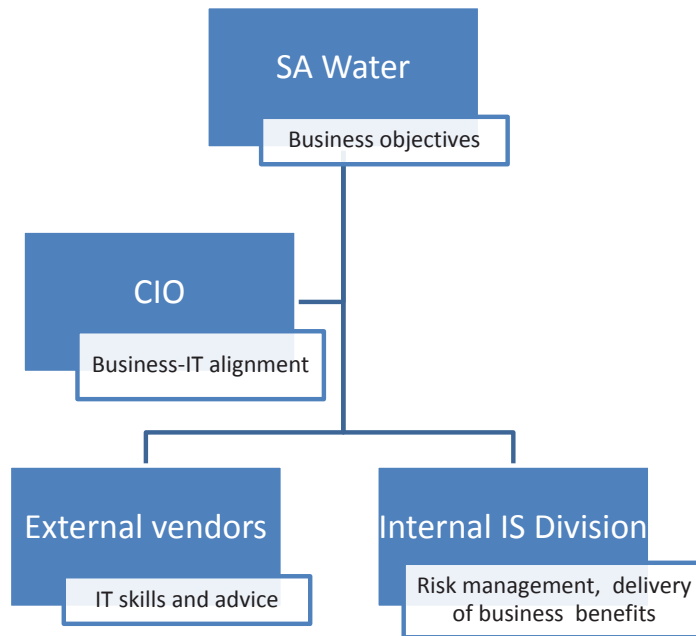


Figure 12 Broker model of selective outsourcing: The SA Water case (Thorogood et al., 2004)

2.3.2 ITO governance in the context of multi-sourcing

As emphasized in Bapna et al.’s (2010) call for multi-sourcing research, tight interdependencies among multiple parties entails updated understandings on the governance of such relationships. Although the holistic approach, which involves both client and vendor as an integrated ITO organization, has been effective in studies of dyadic ITO governance structure (see section 2.1.1), it cannot be directly applied to the context of multi-sourcing, as nuances and complexities of governance will emerge with the increased number of vendors. Thus we have to re-introduce the atomistic view to be combined with the holistic approach when assessing governance structure; in other words, each firm’s structural characteristics need to be evaluated in addition to the governance structure of the

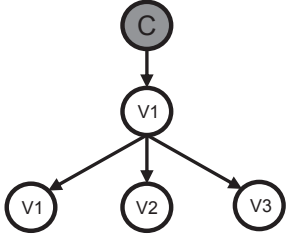
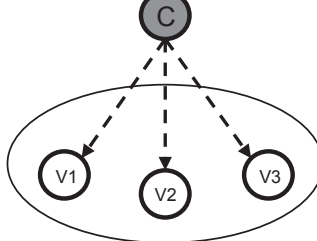
ITO relationship as an entity (Lin & Hekkala, 2014). A similar view is shared by Mugurusi and De Boer (2013) who studied governance in dispersed offshore production. They assert that both intra-firm relationships and the overall governance structure need to be developed hand-in-hand, in order to succeed in each plant's operation while maintaining the coherence of the whole production network.

More often than not, the histories of relationship establishment are different between the client and each vendor. Before the start of a multi-sourcing arrangement when additional vendors are introduced into the relationship, the client might have already experienced some prior outsourcing contracts with some of the vendors. Thus, the mutuality and trust between the client and each vendor can vary significantly, resulting in the discrepancy of governance mechanisms between the client and different vendors. Moreover, the difference in the supply base depth (Su & Levina, 2011), i.e. “[client] firm’s level of investment in a particular supply relationship for a given function” (p.719), also affects the client’s adoption of governance mechanisms with each vendor. In addition to the governance mechanisms between client and each vendor, we also need to pay attention to the mechanisms regulating vendor-vendor relationships, which may exhibit differently in the two multi-sourcing models, i.e. mediated or direct. Confirming the complexity deriving from interdependencies among multi-sourcing parties, Plugge and Janssen (2014) proposed the implementation of clear governance agreements including both contractual and relational elements to facilitate cooperative relationships. However, cooperation is not the only feature of multi-sourcing relationships. Wiener and Saunders (2014) described the vendor-vendor relationships as “forced cooptation”, which contain both competition and cooperation forced by the client. Therefore, governance mechanisms in multi-sourcing will probably engage a mix of contractual and relational elements, which are contextualized not only by client-vendor relationships, but also by vendor-vendor relationships.

As discussed above, both the structure and mechanisms of ITO governance would be more complex in the context of multi-sourcing due to the increased number of vendors. Indeed, the situation of governance also varies in different multi-sourcing models. As elaborated in section 2.3.1, considering vendor task interdependency as the qualifying prerequisite of multi-sourcing (Bapna et al., 2010; Oshri et al., 2015), the BP case (Figure 9) and the Shell case (Figure 11) are most representative of the direct model and the mediated model of multi-sourcing. Since the Kodak case (Figure 8) involves mainly disparate vendor tasks, it is rather a simple compilation of several dyadic relationships than multi-sourcing in the strict sense. Therefore, the governance of such scenario can refer to the knowledge of ITO governance in general (see section 2.1). Due to the scarcity of prior literature on multi-sourcing governance and the interpretive nature of this study

(See Chapter 3), I will not propose hypotheses on the governance structure and governance mechanisms for each multi-sourcing model at this point. In this study, Table 4 is used as a general framework to guide my empirical work, focusing on different relationships to be explored. In the mediated model, governance structure is constructed with two sub-structures: between the client and vendor 1, and between vendor 1 and other vendors. In addition, the compatibility of the chosen multi-sourcing governance structure will also depend on the features of internal structure within each party (Lin & Hekkala, 2014; Mugurusi & De Boer, 2013). Similarly, the governance mechanisms in the mediated model can also differentiate between those adopted by client with vendor 1, and by vendor 1 with other vendors. In the direct model, governance structure is composed of the sub-structures between the client and all directly managed vendors, and among the interdependent vendors. As to governance mechanism in this model, the client's relationship with each of the vendor needs to be considered based on its history and depth. For instance, if the client has had a long term relationship with vendor 1, but has never worked with vendor 2 and vendor 3 before, the client would probably opt for very different governance mechanisms with vendor 1 and with the other two vendors.

Table 4 ITO governance in different multi-sourcing models

Multi-sourcing model	Mediated 	Direct 
Case example	Shell case: Guardian vendor multi-sourcing	BP case: Multiple IT suppliers that act as one
Governance Structures • Market • Hierarchy • Network	<ul style="list-style-type: none"> • C – V1 • V1 – V2, V3 • Internal structure of each party 	<ul style="list-style-type: none"> • C – V1, V2, V3 • V1, V2, V3 • Internal structure of each party
Governance mechanisms • Contractual • Relational	<ul style="list-style-type: none"> • C – V1 • V1 – V2, V3 	<ul style="list-style-type: none"> • C – V1 • C – V2 • C – V3

2.4 Positioning this research

Prior ITO literature has provided rich knowledge base for my study. The literature reviews presented in section 2.1 delineate a landscape of ITO research stream, allowing me to position and confirm the potential value of my own research. In the scope of Dibbern et al.'s (2004) stage model of ITO (Figure 3), I can position my research on the “how” stage within the implementation phase. On one hand, my research interest lies on the post-adoption stage of ITO, involving both the establishment and maintenance of ITO relationships. On the other hand, the empirical setting I have chosen also allows me to explore real-life emergence surrounding different relationships in a multi-sourcing context. Although the topic of vendor selection was not primarily intended in this research, implications related to structuring multiple vendor positions actually emerged during my inquiry on relationship issues. Therefore, my findings will cover all sub-stages within the “How” stage of the ITO lifecycle. In addition to the interactions of these sub-stages identified by prior literature (Dibbern et al., 2004), the emerging feedback loop observed in my empirical inquiry, informing the vendor selection from experience out of multi-sourcing governance, will contribute new insights to the understanding of ITO (Figure 13). This learning curve effect corresponds to the observation of Lacity et al. (2010) on prior literature that highlighted the match of ITO decision with appropriate governance of relationships for superior ITO outcomes; it also shades lights on *how* vendor selection can be appropriately adjusted with learnings from governance practices.

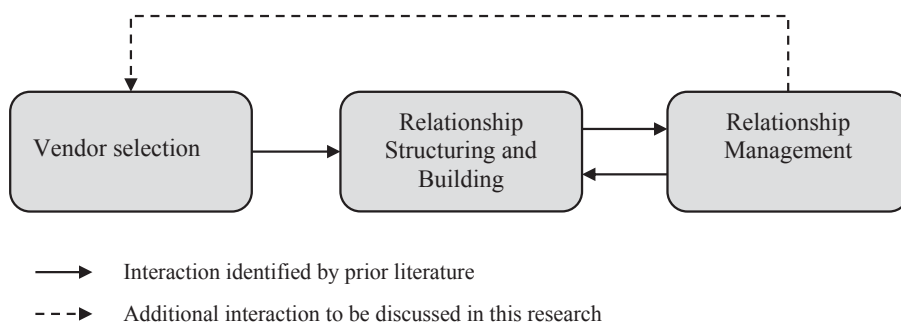


Figure 13 Decomposed “How” sub-stages (Adapted from Dibbern et al., 2004)

3 METHODOLOGY

This chapter presents the methodology of this study. It is started with the choice of philosophical perspectives and the methodology of case study, which is then followed by an elaboration of the mixed method approach. The last section summarizes the implementation of methods in the embodied empirical work.

3.1 Philosophical perspective

Before introducing the methodology itself, it is worth elaborating the underlying philosophical assumptions as the foundation of my methodological choices. Following Avison and Fitzgerald (1995), here “philosophy” is regarded as a set of principles underlying the methodology. Although not all researchers tend to state their philosophical perspectives explicitly in business research in general (Eriksson & Kovalainen, 2008), and in IS research in particular (Sarker, Xiao, & Beaulieu, 2013), I believe it is still important to explicate as it underscores every other methodological aspect and is not necessarily self-evident for all readers.

Philosophical perspective, as discussed here, is often mentioned in IS research in different ways, such as “research paradigm”, “philosophical stance”, “underlying assumption”, and so on. Here I do not intend to assert the particularity of “philosophical perspective” as a distinct concept, but emphasizing its role for my study as an alternative philosophical choice, rather than a strong stance or a competing paradigm in a philosophical debate. Guba and Lincoln (1994) suggested three underlying beliefs delineating different “paradigms”: ontology, epistemology and methodology, which are then widely adopted in business research (e.g. W. Chen & Hirschheim, 2004; Eriksson & Kovalainen, 2008). Ontology concerns the nature of physical and social phenomena, and the relationship between their existence and human action. It aims to answer “*What is there in the world?*” (Eriksson & Kovalainen, 2008, p.13); in other words, it pertains to whether “reality” is objectively given and independent of human action, or subjective and socially constructed (Eriksson & Kovalainen, 2008; Orlikowski & Baroudi, 1991). Both epistemology and methodology relate to the assumptions about knowledge. Epistemology concerns two basic questions: “(1) *what is knowledge, and (2) how do we obtain ‘valid’ knowledge.*” (Hirschheim, 1992, p.29); thus it concerns the essence, construction, and evaluation of knowledge. Methodology is tightly connected to epistemology, yet more practical; it is about

methods and techniques that are appropriate for collecting empirical evidence (Orlikowski & Baroudi, 1991). As assumptions about knowledge are inseparable from worldviews, the three basic beliefs of ontology, epistemology and methodology are closely related, and need to be coherent during any research approach (Sarker et al., 2013).

Following Myers (2013), here I will focus on those philosophical assumptions especially related to epistemology, which is perceived as most pertinent to guide the research. In IS research, epistemology is commonly classified as positivist, interpretive and critical (Myers & Avison, 2002; Orlikowski & Baroudi, 1991). Table 5 presents each category of epistemology together with its related ontology, and methodology to achieve the “internal coherence” suggested by Sarker et al. (2013, p.xii). It is worth noticing that although these archetypical categories are distinct in philosophy, the boundaries between them are not always definitive in practice. For example, Ravishankar, Pan, & Leidner (2011) adopted “soft positivism” in their case study on subcultures, combining both positivist and interpretive approaches in data collection and analysis.

Table 5 Philosophical perspectives and basic assumptions

Ontology	Naïve realism (Guba & Lincoln, 1994)	Internal realism, subjective idealism (Walsham, 1995)	Historical realism (Guba & Lincoln, 1994; Myers & Klein, 2011)
	<i>Reality is objective and independent from human.</i>	<i>Reality is subjective and socially constructed.</i>	<i>Reality is historically constituted, with unfulfilled potentiality.</i>
Epistemology	Positivist	Interpretive	Critical
<i>Researcher</i>	<i>Objective and unbiased</i>	<i>Subjective, non-detachable from the construction of interpretation</i>	<i>Subjective, with an explicit ethical value position</i>
<i>Findings</i>	<i>Law-like relations perceived as “truth”</i>	<i>Logical reasoning derived from the researcher’s interaction with the studied phenomenon</i>	<i>Value-mediated findings to challenge established social beliefs and practices</i>
<i>Purpose</i>	<i>Prediction</i>	<i>Understanding contextualized meanings</i>	<i>Social critique through an adopted critical theory</i>
Methodology	<i>Manipulative experiments; hypothesis testing</i>	<i>Field studies examining humans in their social context</i>	<i>(Similar to interpretive research)</i>

In this research, the interpretive epistemology is adopted to guide the research approach, because my primary purpose of this study is to generate contextualized understandings through interpretations and sense-making together with my research participants. As discussed in Chapter 2, the phenomenon of ITO governance is complex in itself with intertwined conceptualizations. Moreover, to contextualize this phenomenon into multi-sourcing arrangements, such complexity will be further aggravated. Thus the subject matter under investigation, i.e. governance of IT multi-sourcing, is difficult to be attached with objective truth independent from the involvement of various human actors. Meanwhile, due to the highly contextualized nature of governance, it is also difficult to generate precise prediction detached from the context; even if such prediction would be possible, its value would still be questionable. Hence, positivist epistemology, together with its corresponding ontological stance and methodological choices (See Table 5), is not best applicable to my study. Although interpretive and critical research share much similarities in epistemology and methodology, I decided to follow interpretive perspective over critical stance, because my purpose focuses on “*human interpretations and meanings*” (Walsham, 1995, p.74) rather than critique of the social phenomenon with a strong value position in the light of a critical social theory (See Myers & Klein, 2011).

Coherent with the interpretive perspective, my empirical work has been carried out as an iterative process in constant dialogue with the literature. In other words, the review of literature is not aiming to pre-define hypotheses or research frameworks to guide the empirical study, but rather conducted in parallel. For the same reason, the research question was not definitively pre-formulated; instead, only a general topic of interest, i.e. on governance of multi-sourcing relationships, was sketched before my entrance of field work. Therefore, the process of data collection and analysis are not only aimed to gather source of evidence, but also an essential link in the dialogic iteration between data and theoretical understanding to polish the research question (Eriksson & Kovalainen, 2008). During this process, the purposefulness and relevance of literature search increases together with emerging understandings out of empirical data. This iterative process of research is shown in Figure 14. Within the scope of this iterative process, the methodology and methods adopted in this study will be elaborated in the following sections.

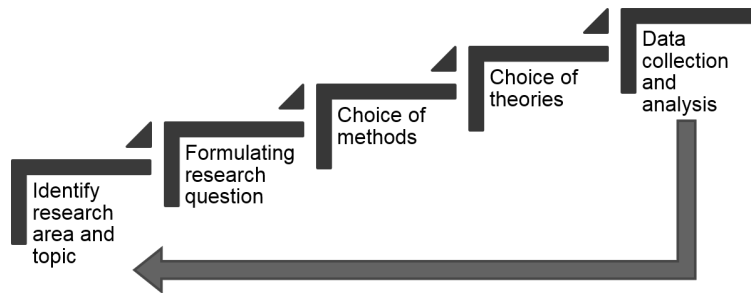


Figure 14 Iterative research process (Adapted from Eriksson & Kovalainen, 2008)

3.2 Case study methodology

3.2.1 Rationale for case study

To study the phenomenon of multi-sourcing governance, which is both diverse and complex in organization settings, the chosen methodology needs to facilitate in-depth learnings, avoid over-simplistic and overly-controlled designs, and hence generate holistic knowledge. This purpose entails rich empirical evidence from real-life business context. Moreover, my research question pertains to “how” the multi-sourcing of IT is governed. To fit the requirement of contextualization as well as my research question, case study is selected as the methodology of my empirical work (Yin, 2014).

In the latest edition of his widely cited book on case study, Yin (2014) offered a two-fold definition of case study. On one hand, he specified the scope of case study as an in-depth investigation on a contemporary phenomenon which is not studied in separation from its real-life context. As an indispensable part of the case, context is tightly connected with the studied phenomenon. This also implies that the researcher has little control over emerging situations during the case study, contrasting from other methodologies such as surveys and laboratory experiments where contexts are clearly separated from the studied object. On the other hand, Yin also designated the data collection and analysis techniques in this definition, recommending multiple sources of evidence, triangulation, and theoretical propositions/hypotheses to guide the empirical work. While the former part of this definition, concerning contextualization, can also fit in interpretive research, the latter part on techniques implies a positivist stance which can represent only one particular type of case study. Actually, case study itself is not bound to any particular philosophical perspective; for example, in the field of IS, scholars have discussed the conduct of case studies under each perspective of positivist (Benbasat, 1987), interpretive (Walsham, 1995) and critical (Myers & Klein,

2011). Consistent with my chosen philosophical perspective, my case study is also interpretive in nature, aiming to “*understand phenomena through the meanings that people assign to them*” (Myers, 2013, p.80). Thus *ex ante* propositions/hypotheses are not conceived before the empirical work; instead, I focus on the emerging social construction throughout the course of the case study, i.e. how people perceive the world and why, and use theoretical understandings from the literature as “*part of an iterative process of data collection and analysis*” (Walsham, 1995, p.76).

As suggested by Myers (2013), case study can be applicable at any research stage on a certain topic. Applied in the exploratory phase of a research topic, case study helps to discover new knowledge and build new theory (i.e. exploratory case study); whereas in the maturing phase of a subject, case study can also be used for testing and comparing theories, as well as developing causal explanations (i.e. explanatory case study). In my case, although the general topic of ITO governance has accumulated a considerable body of literature, knowledge of this topic is still scarce in the new context of multi-sourcing (see Chapter 2). According to Bapna et al. (2010), our prior understandings on dyadic ITO may not be applicable in multi-sourcing from many aspects, including governance. Therefore, my study is exploratory in nature, striving to generate new theoretical understandings on an established topic in a novel context.

Case study can also be distinguished as intensive or extensive (Eriksson & Kovalainen, 2008), according to the aim, design, role of theory, selection of cases, and the way of generalization (See Table 6). Considering my philosophical perspective and the nature of research topic, I choose to follow the design of intensive case study, with in-depth investigation in a single case. Although such distinctions are not always a clear-cut in practice, intensive case study is more suitable with interpretive perspective, as it emphasizes interpretation and meanings in a given context. Referred back to the exploratory nature of my research, the iterative research design is more suitable for the researcher to grasp emerging meanings from an insider’s view. Such iterative process is featured with the continuous interplay between theory and empirical data (Eisenhardt, 1989; Eriksson & Kovalainen, 2008). Although the case is considered as more centric in intensive case studies, it does not exclude the importance of theory; as the interpretations are informed by theory, and the thick descriptions of case can also elaborate theoretical understandings. The type of theory generated or elaborated in this case is for understanding (Gregor, 2006) rather than prediction and analytical generalization. Here theoretical generalization is realized in a naturalistic way by generating common understanding together with the reader.

Table 6 Intensive and extensive case study (Adapted from Eriksson & Kovalainen, 2008)

	Intensive case study	Extensive case study
Aim	Understanding one (or a few) unique case(s) in specific contexts from inside.	Testing, extending or building theoretical constructs.
Research design	Iterative designs over time, detailed investigation	Predefined and systematic research design, replicated in each case
The role of theory	Not central (case itself is central) - In dialogue with empirical data	Central - To be tested, extended or newly built
Selection of cases	Unique, critical, or extreme - Finding a lot from a few	Replication logic; the number of cases is decided by theoretical saturation - Mapping commonalities from a lot
The way of Generalization	Naturalistic generalization - Generating common understanding together with the reader, through a thick, holistic and contextualized description	Analytic generalization: - Mapping common patterns and properties by cross-case comparison

About empirical material for case study, Walsham (1995) argues for interviews as the primary data source. Similarly, Myers (2013) also claim that empirical data, even in in-depth case studies, mostly derive from interviews and documents, particularly in business research. Others maintain that multiple sources of evidence can be selected with hardly any limitation, depending on the research question (e.g. Eriksson & Kovalainen, 2008; Yin, 2014). Here I subscribe to the latter view, that case study as a methodology is not only philosophically neutral, but also not bound to specific empirical data, i.e. either qualitative or quantitative (Eriksson & Kovalainen, 2008); as long as the boundary of the case is clearly defined, the plurality of data source will increase the diversity and richness of the case, hence improve the study to be more accurate and convincing. In fact, case study breaks through the qualitative-quantitative divide, and offers various possibilities to combine qualitative and quantitative data.

3.2.2 Case description

My empirical work is conducted as an intensive case study, which investigates a multi-sourcing relationship, involving one client (CL) and its two suppliers (SP1 and SP2), for the maintenance of IT infrastructure. As follows, I will introduce the

profile of each company, as well as a brief history of the multi-sourcing relationship.

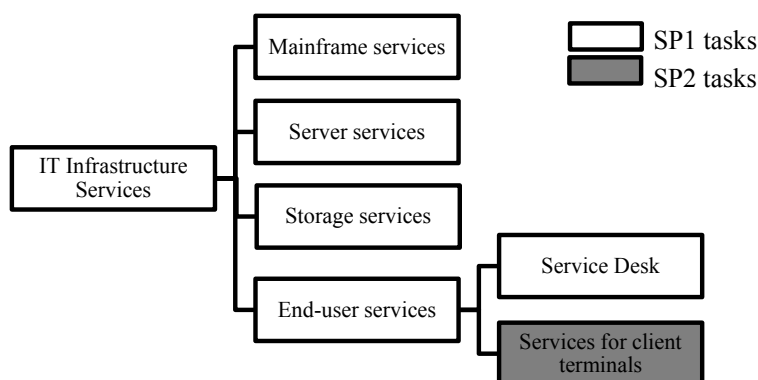


Figure 15 Task allocation between two suppliers

CL is a Nordic-based insurance company operating in the Nordic and Baltic countries as well as in Russia. In 2012 when I carried out my empirical work, CL had approximately 7000 employees, serving 3.1 million customers. As modern insurance business demands highly stable IT infrastructure for smooth transactions in sales, claims, call centres, etc., CL decided to outsource the IT infrastructure maintenance work to the best-of-breed suppliers. One of the chosen suppliers is SP1, a leading international company in the area of IT services, with about 18000 employees worldwide according to the company information in 2012. The initial outsourcing relationship began in 2005, when CL signed the first five-year contract with SP1 for all the delivery and development services on IT infrastructure, including hardware usages such as server and storage, services for the mainframes in the legacy systems, end-user services such as workstation supply and maintenance, and other ad-hoc IT projects based on demand. In 2010, CL decided to renew the outsourcing contract with SP1 for another five years, on condition that SP1 had to subcontract the end-user services (except the service desk) to a second supplier SP2, which is designated by CL but supposed to be managed by SP1. Compared to SP1, SP2 is smaller in form of scale (with about 6500 employees in 2012), and operating regions (SP1 is an international company whereas SP2 only operates in Nordic and Baltic regions). However, SP2 had been fast-growing through mergers and acquisitions of small companies. Actually, SP2's relationship with CL started as early as 2006, since they became the main computer hardware provider for CL, but their involvement in the infrastructure services only began with the new sourcing arrangement in 2010. The rationale for CL to demand such change was the appreciation of SP2's expertise in the specific end-user area, as well as to introduce competition between the two suppliers in the new multi-

sourcing relationship in order to obtain better quality/price ratio on the outsourced services. The task allocation under the new sourcing structure is illustrated in Figure 15. My data collection involves 61 employees in CL's department of IT services, a team of 24 people in SP1 who worked exclusively for CL, and five people from SP2 who also exclusively devoted to the service for CL.

In addition to the background information of all the participating companies, here it is worth clarifying my role in this case study, my relationship with the participants, and how I gained access to the case materials. I was a full-time employee by CL before I started to pursue this doctoral study. However, this previous work focused on the area of IT reporting, which was not directly related to sourcing issues; my intention to start the doctoral study was also a personal decision, and not motivated by my former employer's business needs. The case study was initiated about one year after the starting point of my doctoral study. At that time, I have reviewed pertinent literature on the general topic of IT outsourcing, and was looking for data collection opportunities for my empirical work. During a company visit to CL in a course for my master students, I took the opportunity to discuss about my research interest with a former colleague in CL, who was in charge of the IT infrastructure services. She was interested in my research topic, and introduced the situation and issues they were faced with in the area of outsourcing governance. Out of the mutual interest of each other's work, we initiated this case study together, in which I was granted access to all the three participating organizations, as an external observer of their Governance Project within the IT Stability and Agility Program. The general goal of the Governance Project is to have an effective governance model for all current suppliers and future suppliers, thus to save time and resources in governing outsourcing relationships. Before accessing the field, my priority of scientific research was acknowledged by all the participants, while some extent of advisory work for the Governance Project was also expected from me. Most importantly, the three organizations, CL, SP1 and SP2, all agreed on my neutral stance in the case, i.e. I was not working for the interest of any of them in particular, but investigating the issue as a non-participate researcher.

3.3 Mixed-method approach

Mixed-method approach combines qualitative and quantitative methods to elicit insights that each of the involved method cannot offer alone. In my study, the method of Social Network Analysis (SNA), which is primarily quantitative in nature, is concurrently combined with qualitative inquiries to answer the research questions with fuller context. In this section, I will first review the purpose of

choosing mixed methods, then introduce each method separately, and finally elaborate how the two strands of method are integrated.

3.3.1 Purpose of mixing methods

Influenced by the interpretive philosophical perspective, the rationale for choosing mixed methods is based on two premises as suggested by Mason (2006):

- The realities, being socially constructed through lived experiences, are multi-dimensional.
- The meanings of social lives, being multi-dimensional, are enacted on both macro and micro scales.

Based on these premises, in interpretive studies the construction of interpretations must link across different dimensions and scales. As commonly assumed, interpretive research is almost a synonym as “qualitative research” (e.g. Mason, 2006; Venkatesh, Brown, & Bala, 2013). However, the practical limitations of qualitative research hinders the achievement of breadth on the subject matter. Take interview as an example, although an extent of depth can be achieved through ‘micro’ investigation, the ‘macro’ aspect, i.e. number of interviewees and the coverage of topics, are limited for the given time and resource. For a balance of breadth and depth, mixed-method can potentially help with a holistic understanding, embracing divergent/complementary views (Venkatesh et al., 2013). Moreover, the choice of research methods must be in line with the research questions (Mason, 2006; Mingers, 2001; Venkatesh et al., 2013). My research questions (see Chapter 1, section 1.1) pertain to the mechanisms and structure of ITO governance in the context of multi-sourcing. On one hand, the topic of ITO governance is indeed multi-dimensional, and my research questions focus on its mechanisms, structure and context. On the other hand, each dimension can be investigated in different scales. As defined in Chapter 2, governance structure is a ‘macro’ and abstract matter, while governance mechanisms are ‘micro’ and embodied. The multi-sourcing context itself involves both ‘micro’ and ‘macro’ scales, with multiple stakeholders both on the organizational level and individual level. In this case, mixed-method not only provides methodological creativity, but also offer the possibility to explore each dimension and their interrelations with meaningful interpretation. In concrete terms, mixed-method help to investigate how ITO governance, as a multi-dimensional social phenomenon, is embedded in the multi-sourcing context which is equally multi-scale and complex.

By definition, mixed-method enables the researcher to combine different strands of methods, but what is the expected outcome of such combination? Some researchers perceive triangulation as a general epistemological claim on the

intended outcome of mixed-method research (Moran-Ellis et al., 2006). Others devise more detailed schemes for the rationale of combining methods (Bryman, 2006; Greene, Caracelli, & Graham, 1989; Venkatesh et al., 2013). In fact, these two approaches are not contradictory, as the concept of triangulation has been debated and developed into multiple meanings, which are included in most of the schemes. Considering its pertinence to IS research, here the scheme of Venkatesh et al. (2013) is presented as follows:

- *Complementarity*: to obtain complementary views from different methods on the same phenomena.
- *Completeness*: for a more complete picture of the studied phenomena.
- *Development*: using the results of one method in the development of the other method.
- *Expansion*: to extend the findings of one method with the understandings generated with the other method.
- *Corroboration/confirmation*: to increase the credibility of research with convergent findings from different methods.
- *Compensation*: to compensate for the weaknesses of each method by combining different methods.
- *Diversity*: to obtain divergent views from different methods on the same phenomena.

In my study, the mixed-method approach, including qualitative inquiries and social network analysis, is intended to achieve multiple purposes for the case study, including corroboration/confirmation, complementarity and diversity. In the next three sections, I will elaborate the rationality in the choices and conducts of different data collection and analysis methods, as well as how different methods are integrated. Following the introduction of each strand of method, specific details of my empirical study (e.g. the number of observed meetings, demography information of the interviewees, participants of the social network questionnaire etc.) are specified.

3.3.2 Qualitative inquiries

Qualitative data were generated from various sources during the case study, including interviews, documents, meeting observations, and fieldnotes.

As one of the most common methods to collect qualitative data, interviews are pervasive in qualitative research despite the chosen philosophical perspective (i.e. positivist, interpretive, or critical) and methodology (e.g. case study, action research, ethnography, etc.). In an interpretive case study, interviews enable the researcher to access and co-construct the social world together with the interviewees, thus deeper insights with situated nuances can be captured through

the interactions (Moisander, Valtonen, & Hirsto, 2009). Three types of interviews can be classified: structured, semi-structured, and unstructured (Myers, 2013), between which the major differences lie in the extent of adherence to pre-formulated questions, and the reliance on improvisation during the interviews. In qualitative research, particularly in IS, semi-structured and unstructured interviews are most commonly used (Myers & Newman, 2007). As shown in Figure 14, given my iterative research process, interviews are not only important source of evidence for my study, but also an essential link in the dialogic iteration between data and theoretical understanding to polish the research question (Eriksson & Kovalainen, 2008). This requires the role of interviewees to be a collaborative discussant rather than a respondent to specific questions (Moisander et al., 2009). Therefore, the interviews were all conducted individually, face-to-face, and unstructured, i.e. without pre-formulated question list. To achieve the benefit and avoid the disadvantages of unstructured interviews (see, e.g. Myers, 2013), a balance between over-passivity and over-direction is required during the interviews (Walsham, 1995).

Table 7 Interviews

<i>Date</i> <i>dd.mm.yy</i>	<i>Place</i>	<i>Interviewee</i>		<i>Duration</i> <i>hh:mm:ss</i>
		<i>Company</i>	<i>Position</i>	
25.06.12	Turku	CL	Service Delivery Manager	01:00:41
23.08.12	Stockholm	SP1	Customer Manager	00:56:57
23.08.12	Stockholm	CL	Head of IT Sourcing	00:57:09
23.08.12	Stockholm	SP1	Service Operation Manager	00:57:42
23.08.12	Stockholm	SP2	Delivery Manager	01:00:10
24.08.12	Stockholm	SP1	Financial Controller	00:56:12
11.09.12	Stockholm	SP1	Delivery Manager	01:02:24
11.09.12	Stockholm	SP1	Continuous Service Manager	00:48:28
12.09.12	Stockholm	CL	Service Delivery Manager	00:35:07
12.09.12	Stockholm	CL	Head of IT Operations	00:41:35
12.09.12	Stockholm	SP1	Continuous Service Manager	00:41:51
12.09.12	Stockholm	CL	Service Delivery Manager	00:29:18
18.09.12	Turku	CL	IT Security Manager	00:39:02
18.09.12	Turku	CL	Head of Business Liaisons	00:53:33
25.09.12	Turku	CL	Head of End-User Services	00:48:47
11.10.12	Turku	CL	Availability and Performance Manager	00:52:43
11.10.12	Turku	CL	Head of IT Services	00:52:54
16.10.12	Turku	CL	Head of Procurement Services	00:42:01
25.10.12	Turku	CL	Capacity Service Responsible	00:49:18
01.11.12	Turku	CL	Head of Application Infrastructure	00:45:22
07.11.12	Stockholm	SP2	Delivery Manager	00:52:32
07.11.12	Stockholm	SP2	Customer Manager	01:44:33
08.11.12	(Video call)	CL	Consultant	00:40:05

Altogether, I have conducted 23 interviews with interviewees from all three participating companies; all interviews were tap-recorded and transcribed for further analysis. Table 7 presents the basic information of the interviews. Due to the Non-Disclosure Agreement (NDA), interviewee's names are not disclosed here. The process of interviews are carried out as follows. First, the conversation started with my self-introduction to clarify the purpose and theme of the interview, i.e. to focus on the situation of the multi-sourcing governance under investigation. Then, I invited the interviewees to elaborate on his/her role in the multi-sourced work, inspiring him/her to recall the personal experience on the unique challenges in this setting. When the interviewee was talkative, the conversation continues naturally without my interruption, unless the conversation became overly irrelevant to the topic; if the interviewee talked too little and the conversation broke in the course, I would improvise a few questions on the spot to facilitate the continuance of discussion. For example, from time to time, I encouraged the interviewee to describe memorable examples during his/her work related to governance. Through such vivid social interaction, this approach has been effective to delineate the rich context and explore through complexity in my case study.

Besides interviews as “researcher provoked data”, I have also collected “naturally occurring data” by accessing what the participants are actually doing (Silverman, 2006). This includes meeting observations, documents, and field notes in different occasions. First, I have conducted non-participant observation (Eriksson & Kovalainen, 2008) in four of the monthly governance meetings; in other words, I listened to the meetings either in the same meeting room or online (when the meeting was carried out via video conference), but not participating in the conversation during the meeting. In addition, I have also presented my preliminary findings to the management team of all three participating companies, which served as participant observations for my research. Table 8 provides information on each meeting observation. For confidentiality, no tape-recordings could be obtained for the meetings; instead, observation notes kept during and after each meeting were used for analysis.

Table 8 Meeting observations

Date <i>dd.mm.yy</i> , Place, Meeting name	Attendees <i>Company: Position (Number of attendees)</i>	Duration <i>hours</i>
Non-Participant Observation		
15.08.12, (Video conference), Service Operation Review	<u>CL</u> : Head of IT operation (1), Availability and Performance Manager (1), IT Security Manager (1), Service Delivery Manager (5) <u>SP1</u> : Service Operation Manager (1), Continuous Service Manager (2), Delivery Manager (1) <u>SP2</u> : Delivery Manager (1)	3
23.08.12, Stockholm, Account Management Board	<u>CL</u> : Head of IT Sourcing (1), Head of IT operation (1), IT Security Manager <u>SP1</u> : Customer Manager (1), Financial Controller (1), Service Operation Manager (1) <u>SP2</u> : Delivery Manager (1)	3
11.09.12, Stockholm, End-User Service Review	<u>CL</u> : Service Delivery Manager (3), Consultant (1) <u>SP1</u> : Continuous Service Manager (1), Delivery Manager (2) <u>SP2</u> : Delivery Manager (2)	2.5
12.09.12, Stockholm, Service Operation Review	<u>CL</u> : Head of IT operation (1), Service Delivery Manager (6) <u>SP1</u> : Service Operation Manager (1), Continuous Service Manager (3), Delivery Manager (1) <u>SP2</u> : Delivery Manager (1)	3
Participant Observation		
30.11.12, Turku, Presentation of preliminary findings to the management	<u>University</u> : The researcher <u>CL</u> : Head of IT Services (1), Head of Business Liaisons (1), Head of IT Sourcing (1), Consultant (1) <u>SP1</u> : Customer Manager (1), Service Operation Manager (1) <u>SP2</u> : Customer Manager (1)	1.5

In addition to interviews and meeting observations, I was also granted access to different company documents relevant to the case, including organization charts, documents on formal processes, the governance appendix of the ITO contract, various reports presented in the meetings, and meeting minutes. These documents formed an important part of the qualitative data, illustrating the context and formal practices. Furthermore, field notes were generated during different occasions. For instance, before the interview, if there was some waiting time, I would observe surroundings and take notes about the office environment or other emerging encounters. Sometimes, interesting conversations in the coffee room were also recorded afterwards as field notes. Another important piece of field notes was captured on the key supporting IS for governance. Although I was not granted full access to the system, the interface as well as basic functions and processes were shown to me by an expert.

3.3.3 *Social Network Analysis*

Besides qualitative inquiries, my case study also involves a network approach through the method of Social Network Analysis (SNA). SNA is developed specifically to investigate the relational aspects of social structures (Scott, 2013). Such network approach supports the study of interactions among actors within different social relations, in which the network is defined as a set of nodes and ties (Barnes, 1954; Mitchell, 1974). Nodes represent the actors in the network, which can be defined on different levels, such as individual person, organizations, industrial clusters, etc. Ties then illustrates the interactions and relationships among the actors. As a network consists of both nodes and ties, such network perspective hence shifts from the traditional focus of sociology and management on the attributes of individual actors, to the understanding of social interaction in its larger context.

As mentioned in section 3.2, one rationale for the choice of case study methodology is to address the complexity of the research topic – multi-sourcing governance. Qualitative inquiries, as introduced in the section 3.3.1, are widely adopted to investigate dynamic and fuzzy phenomena in their contexts; although SNA appears as an entirely different type of method with node-and-tie language, it is also effective in generate and structure data to uncover complexity. Thus such network approach can be complementary to qualitative material within case study research, and the understanding of networks can further advance and renew the development of case study methodology (Gummesson, 2007). In addition, for studies leveraging SNA, the sampling strategy of a single site is not uncommon (Krackhardt, 1990; Tsai & Ghoshal, 1998); especially, the clear boundary of the network, as appearing in a single case, is desired in SNA research due to the minimal differentiation in context. Therefore, incorporating SNA into this case study is appropriate and beneficial.

The network data can be collected in various ways. Actually, the data collection for SNA is not bound to either side of the quantitative/qualitative dichotomy; in other words, both quantitative and qualitative approaches can be opted to collect network data. Principally, SNA can explore both primary and secondary data, including documents, ethnographic field notes, survey results, and so on (Scott, 2013). Network data is then extracted from one or multiple sources, typically involving lists of nodes and ties, which are clearly defined in the analysis. Using standard questionnaires, survey method is widely used in network research, providing a major data source for SNA (Marsden, 2011). According to Scott (2013), surveys are especially useful for collecting whole network data among a closed group, but its sampling strategy needs to be carefully considered, which concerns the boundary of network under investigation. In my case to investigate multi-sourcing relationships, the network can be bounded within any of the

participating firms, within a client-vendor dyad, or among all involved parties. Hence, the boundary of network can be clearly defined according to the purpose of investigation. Once the boundary is determined, a whole network analysis is beneficial to understand the dynamics and structure within the selected group of outsourcing participants. Moreover, due to the limitation of access, a continuous ethnographic observation is not viable in my case study, thus SNA through field notes is not an option for me. Therefore, I opted for the questionnaire method collecting network data with a questionnaire. To keep the conduct of this questionnaire method coherent with my interpretive stance of philosophical perspective, i.e. to achieve the “internal coherence” suggested by Sarker et al. (2013), I strived to minimize my own pre-assumption and control on the design of questionnaire. This is realized through avoiding leading questions to leave more neutral choice for the respondents. Unlike common surveys for statistical analysis, the questionnaires for SNA contain mostly indirect questions, which means the listed questions are almost unrelated to the research question per se. In my case, the SNA questionnaire only contains questions on who interacts with whom in different contexts, which is not directly related to my research question pertaining to multi-sourcing governance. The sense-making of raw data to answer the research question thus heavily relies on my own interpretation through the integration of both network and qualitative data, as well as the chosen method of data analysis.

Through the network approach, different characteristics of ties can be recognized, which is defined as *multiplexity*, representing multiple interests that connect the actors. For instance, two employees in the same work group may interact in multiplex relationships, if they are colleagues and also friends. Similarly, the network of this group can be simultaneously analysed as an advisory network and as a friendship network. Therefore, networks are contextually constructed, and the examination on the same group of nodes can yield a multiplexity of networks, which can be compared for meaningful interpretations. In this study, a structural comparison between formal and informal networks is applied to unfold the extent of formalization (Rank, 2008) in this ITO network. As ITO governance structures are associated with the degree of formalization both in each firm and in the sourcing relationship across firms, the structural comparison also needs to be carried out both internally in each client/vendor firm, and in the cross-firm networks.

Besides the interpretations through understanding of multiplexity, the network approach can also be leveraged to bridge the gap between the understandings on the macro (i.e. organizational) level and on the micro (i.e. individual) level, because it “allows researchers to capture the interactions of any individual unit within the larger field of activity to which the unit belongs” (Kilduff & Tsai, 2003, p.13). Similar to the approach of Brass, Galaskiewicz, Greve, and Tsai (2004), a

dyadic ITO relationship can be perceived in two levels: 1) the client and vendor as nodes, and the sourcing relationship as a tie; 2) individual employees from each participating firm as nodes, and their interrelations as ties. In addition, on the organizational level, more actors (e.g. other organizations such as competitors, customers, and other clients) can join the network as other nodes, thus we can also involve ties beyond the outsourcing dyad to the scenario of multi-sourcing with multiple vendors, or even multi-client and multi-vendor sourcing network (see Figure 16).

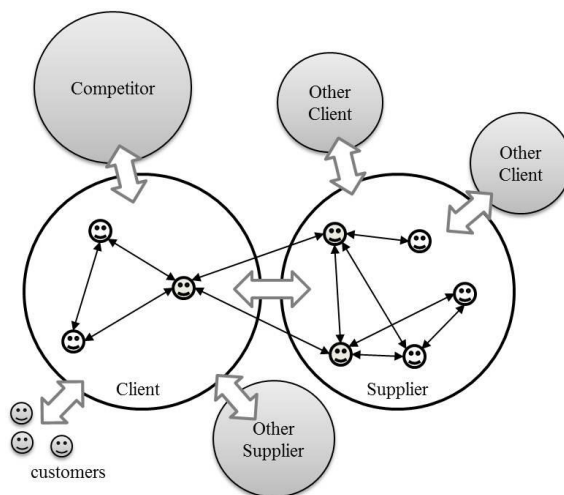


Figure 16 Multi-layer networks of outsourcing

In the specific context of ITO governance, interpersonal networks can serve as a proxy to assess the practice of governance elements such as coordination and inter-organizational linkages (Lin, 2013). Thus with the method of SNA, we can illustrate an assemblage of network ties to obtain structural insights on governance practice, which is an essential aspect to answer the research question. The SNA in my case involves active participants from CL and SP1. As mentioned in 3.2.2, only five people from SP2 are involved in this multi-sourcing case, and the three interviews I conducted have already covered the network information both among themselves and between SP2 and other two firms, hence SP2 is not included in the scope of my SNA. In contrary to SP2, a large number of CL's employees are directly or indirectly involved in the governance project. Since SNA require a higher response rate compared to traditional statistic method, it is essential to access the most active participants for the analysis. To achieve an effective selection of participants, I first started the social network questionnaire among all the 24 team members in SP1, considering this appropriate group size to construct the network. In this first questionnaire, in addition to the questions related to their

internal network, i.e. their interactions with own colleagues, I requested each respondent to select 10 persons from CL whom they contacted most frequently in their daily work. 23 people out of the 24 responded to the questionnaire, achieving a response rate of 95.8%. The result of this first SNA suggested 49 frequent contacts of SP1 from CL. Together with CL's business liaison manager, based on the list of 49 names, we obtained an updated participant list for the second SNA; the new list consists of 61 employees, for which we excluded the retired or transferred people, and added names who were not mentioned by SP1 but also with key roles in the governance. The second SNA questionnaire received 51 responses (83.6%). Table 9 summarizes the network construction and analysis carried out in the two SNAs and used in each paper. More details of each SNA are presented in Paper 2 and Paper 3.

Table 9 SNA: network construction and analysis

	Participant <i>Company (Nr.)</i>	Network construction	Analysis methods in each paper
SNA 1	SP1 (24)	<ul style="list-style-type: none"> • Internal network • Directed external network: SP1=>CL 	<ul style="list-style-type: none"> • Paper 2: Density and Quadratic Assignment Procedure (QAP) on internal and external networks • Paper 3: Density comparison between units and between governance levels
SNA 2	CL (61)	<ul style="list-style-type: none"> • Directed external network: CL=>SP1 	<ul style="list-style-type: none"> • Paper 3: Density comparison between units and between governance levels

3.3.4 Interpretive integration

Now that each strand of method has been introduced, I will discuss the relations between these methods, as well as the process to form such relations. A set of key questions have been identified to construct the typology of mixed-method research (Bryman, 2006; Moran-Ellis et al., 2006; Venkatesh et al., 2013):

1. Are the qualitative and quantitative data collected in parallel or in different phases?
2. Are both qualitative and quantitative methods treated as equal?
3. Are different methods orienting to the same research objective?
4. At which stage of the research does the interaction occur between methods?

The first question concerns two major strategies for the research design of mixed-method: *concurrent* and *sequential* (Venkatesh et al., 2013). As mentioned in the end of section 3.3.1, my purpose of mixing methods for the study is for complementarity and diversity; in other words, mixed-method is used to obtain diverse perspectives and compare different results for the understanding of the phenomenon. To achieve such objective, a concurrent design is adopted. Although the empirical work did start with qualitative interviews to gain rapport with some key participants in order to facilitate the subsequent data collection, the conduct of interviews did not affect the design and interpretation of the SNA questionnaire. Hence, the data collection and analysis of the two methods are considered as simultaneous, following the concurrent design strategy.

Decisions about question 2 and 3 bear on the chosen process to form the relations between different methods, being combined or integrated (Moran-Ellis et al., 2006). If both qualitative and quantitative methods are treated with equal weight, and their findings are interdependent and aiming for a common research question, the process can be identified as integration. Contrarily, if one method is dominant, the findings are independent with minimal interface, and different methods are oriented to different research questions, the methods are considered as combined rather than integrated. In this sense, my study applies the process of integration to bring the findings of qualitative inquiries and SNA into meaningful relation.

The last question refers to the point when integration, in my case, occurs during the research. According to the review of Moran-Ellis et al. (2006), the term “integration of methods” is only reserved for studies where the interaction of methods takes place from the earliest stage of the research process, i.e. when identifying the research topic and formulating research questions in the start of iteration (see Figure 14). However, other approaches which conduct the intermeshing in later stages of research can also be recognized as “integration”, including “*separate methods, integrated analysis*”, and “*separate methods, separate analysis, theoretical integration*” (Moran-Ellis et al., 2006, p.54, p.55). My research opted for the latter approach of “*interpretive integration*” (Moran-Ellis et al., 2006, p.55), in which integration occurs after findings of both methods have been generated, when the knowledge out of both methods is brought together for a coherent interpretation.

This approach of interpretive integration is also in line with the notion of “*meta-inference*” defined by Venkatesh et al. (2013) as the integration of qualitative and quantitative findings. They also emphasize the imperative nature of such inference, since it pertains to the primary objective of mixed-method. Integration at this stage enables an open attitude for the corroboration of methods, as well as contradictions, divergences, and complementary elements emerged during each strand of analysis. If such interpretation focuses on opposing findings, the

technique of *bracketing* can be leveraged (Venkatesh et al., 2013). Bracketing is particularly useful to deal with surprising findings by reconciling and explaining the contradictions in the final interpretation to obtain new theoretical understanding. Another approach for meta-inference, as recognized by Venkatesh et al. (2013), is *bridging*. Differing from *bracketing*, the process of *bridging* is followed to build a consensus between the two strands of findings. This choice of different integration approach should be consistent with the purpose of mixing methods. To achieve complementarity and diversity, *bracketing* is more suitable; while for corroboration and confirmation, *bridging* is a coherent choice. Through either approach, the aim is always to transcend the understandings out of each method and generate knowledge beyond the offer of either individual method.

3.4 Implementation of methods

This section introduces methods adopted in all the four papers included in this dissertation, and clarifies my role and share of work in each co-authored paper (i.e. Paper 1 and Paper 2). Paper 1 is a conceptual article on ITO governance; among the empirical papers, Paper 2 and 3 both apply mixed methods, whereas Paper 4 is solely based on qualitative data. Table 10 summarizes the implementation of methods and usage of empirical data in each paper.

Paper 1 reviews the concept of governance in ITO literature. The paper consists of two parts: 1) a literature review particularly within IS discipline, and 2) a synthesis of prior knowledge from reference disciplines besides IS. As the first author, I structured the whole paper together with my co-author, while focusing on the first part of literature review. Individually, I have collected and analysed all the relevant literature from the IS basket journals to identify two major research strands; subsequently, my co-author discussed my results in the light of reference disciplines to identify research gaps and future directions. My responsible part of literature review is also most relevant to this dissertation, forming a solid theoretical foundation for the whole study.

Paper 2 zooms in to supplier's perspective of the governance structure with mixed methods. The empirical material was collected in SP1, including six face-to-face interviews (see Table 7) and an SNA questionnaire among the entire team of 24 people (see Table 9). Under the theoretical framework adapted from Miranda and Kavan's (2005) MoG model, the mixed methods first corroborates findings from the two strands of data; the analysis of qualitative interviews is to identify certain characteristics pertaining to governance structure, while density analysis and QAP in the SNA delineate and compare the configuration of internal and external networks within formal and informal as well as face-to-face and virtual contexts. The findings from both strands are then integrated into the theoretical

framework using the approach of *bridging* to achieve consensus. In addition, different methods also cover complementary elements in the theoretical framework. For example, the governance elements of coordination, conflict resolution, affect, and shared understandings are investigated with interview method, whereas the element on inter-organizational linkages is studied with the support of SNA. As to my role in this co-authored paper, I should be positioned as the main contributor, since I initiated the work and finished the first draft independently. Then my co-author joined the work and contributed, as an experienced researcher, to refine the paper by adding relevant literature, deepening the theoretical discussion, and proofing the text together with me. She also kindly guided me through the journal submission process. As the main contributor, I have fulfilled the empirical work, the choice of theoretical framework, as well as preliminary findings and conclusions independently. The empirical work was also an important part of the entire dissertation project.

Table 10 Methods applied in each paper

Papers	Methods		Purpose of mixed methods	Interpretive integration
	Qualitative	SNA		
Paper 1: ITO governance in the prior literature	<ul style="list-style-type: none"> • Non-empirical • Literature review • Conceptual discussion 		N/A	N/A
Paper 2: SP1's interpersonal networks and the ITO governance structure	<ul style="list-style-type: none"> • 6 interviews in SP1 	<ul style="list-style-type: none"> • Participants: 24 (SP1) • <i>Density</i> and <i>QAP</i> analysis on multiple internal and external networks 	<ul style="list-style-type: none"> • Corroboration/confirmation • Complementarity 	<ul style="list-style-type: none"> • Integration occurs after findings of both methods have been generated. • Bridging
Paper 3: Governance-in-Contract and Governance-in-Practice between CL and SP1	<ul style="list-style-type: none"> • Document analysis on the "Governance Appendix" of the ITO contract 	<ul style="list-style-type: none"> • Participants: 24 (SP1) and 61 (CL) • <i>Density</i> comparison between units and between governance levels 	<ul style="list-style-type: none"> • Complementarity • Diversity 	<ul style="list-style-type: none"> • Integration occurs after findings of both methods have been generated • Bracketing
Paper 4: Multi-sourcing governance in perception and in practice, among CL, SP1 and SP2	<ul style="list-style-type: none"> • 23 interviews in all organizations • 4 meeting observations • Document analysis • Field notes 	N/A	N/A	N/A

Expanding the scope from the supplier organization to the ITO dyad, Paper 3 is another mixed-method attempt to compare Governance-in-Contract (GiC) and Governance-in-Practice (GiP) in the dyad between CL and SP1. The qualitative data source is a 29-page document of “Governance Appendix” for this particular ITO relationship, which was last updated in 2010; SNA was conducted among 24 people from SP1 (using the results of external networks from the same questionnaire as in Paper 2), and 61 people from CL (see Table 9). While the document analysis reveals the communication structure defined in the contract (i.e. GiC), the SNA compares the network density between different units and different governance levels in both cluster of networks pertaining to technical and non-technical issues (i.e. GiP). In this way, the mixed methods fulfilled both purpose of complementarity and diversity, offering understanding on the same phenomena of governance with complementary views of GiC and GiP, while contrasting them for surprising divergence. The approach of *bracketing* is followed in the interpretive integration, to reconcile the contradictions in the findings of each method.

The last paper, Paper 4, finally covers the multi-sourcing governance among all parties, involving CL, SP1 and SP2. Differing from the above-mentioned two empirical papers, this paper derives from pure qualitative data collected for this dissertation, including 23 interviews (see Table 7), four non-participant meeting observations (see Table 8), documents, and field notes. The one participant meeting observation (see Table 8) was not mentioned in this paper, but it also helped in understanding the case background and confirming some of the findings with the management from all three companies.

4 FINDINGS

This chapter summarizes findings of each research paper, and explains how each paper answers the sub-questions and contributes to the main research question.

4.1 The concept of governance in ITO

Paper 1 is a conceptual paper reviewing prior IS research on ITO governance, and suggesting research gaps and future directions in the light of relevant research in reference disciplines. It forms an important part of theoretical basis for this dissertation (see section 2.2).

Recognizing the problem of vague conceptualization on ITO governance, the paper begins by reviewing relevant article in the “Senior Scholars’ Basket of Journals” in the field of IS. This literature review identifies two strands of governance research: governance structure and governance mechanisms, which are different in conceptualization while highly interrelated as integral aspects of governance. The definitions and development of the two concepts have been elaborated in section 2.2, thus will not be repeated here in details. However, as key findings of this paper, it is worth revisiting the major terminologies related to each concept. Three types of governance structure are identified in the ITO literature: market, hierarchy, and network. The three structures have been mostly studied as ‘pure’ types; hybrid structures, although intuitively pervasive, still lack empirical investigation. The synthesis of prior literature also identified the typology of governance mechanisms into contractual governance and relational governance. Unlike the research on governance structure, the interaction between contractual and relational governance has been extensively discussed by ITO researchers. In addition, governance mechanisms involve different elements such as contract and control, exhibiting different characteristics in contractual and relational governance. The value of such conceptualization lies in the clarification and integration of originally dispersed terminologies, which deepens the meaning of “*structuring the governance*” as “*the combination of an appropriate portfolio of governance structures, together with different coordination mechanisms*” (Lin & Vaia, 2015, p.12) in different contexts.

Based on the literature review within IS, the paper then enlarges the scope by introducing relevant research in reference disciplines, such as organization study, management, marketing, etc., to discuss how the ITO research community, in

particular, can learn from these reference disciplines on the conceptualization of ITO governance. Different reference theories are briefly reviewed to shed light on the theoretical gaps in the research of ITO governance, including Transaction Cost Economics, Agency Theory, Control Theory, Contingency Theory, Network Theory, and so on. This analysis reveals the need for an integrated framework to theorize governance. It also calls for the evaluation on the effectiveness of governance under different contexts. Indeed, to address these gaps, more interdisciplinary studies on governance will be necessary in the future research.

The paper contributes to the research question by clarifying the core concepts of governance structure and governance mechanisms. It also serves as a foundation for the empirical studies in this dissertation, which then updated the theoretical framework with empirical evidence and also contextualized it into the multi-sourcing scenario.

4.2 Vendor's governance structure

Paper 2 is an intra-organizational study from the vendor's perspective, and it empirically examines vendor's governance structure in the context of interpersonal networks. The application of SNA is illustrated as an effective method to reflect governance practice, and the first sub-question is answered with empirical evidence: *How do vendor's interpersonal networks deviate from their perceived governance structure?*

This sub-question is answered with two strands of findings, as well as the interrelations between them. First, with qualitative data out of interviews, we analyzed the perceived governance structure by the vendor team with reference to the characteristics of governance elements, including *coordination*, *conflict resolution*, *inter-organizational linkages*, *affect*, and *shared understandings* (see Miranda & Kavan, 2005). Accordingly, hierarchy governance was identified as the general structure, based on the document-based *coordination*, formally distributive *conflict resolution*, formal forums as main *linkages*, low level of trust *affect* and limited *understandings being shared*. However, exceptions were also observed, that one interviewee shows the willingness and practice to promote network governance in the outsourcing dyad, by establishing a closer personal and professional relationship with the client.

The other strand of findings, pertaining to the interpersonal networks, were examined with SNA. To leverage from the network multiplexity, we constructed five types of networks: formal and face-to-face, formal and virtual, informal and face-to-face, informal and virtual, and personal/social. These multiplex networks are under two overarching sets: internal networks (i.e. 24 members of the SPI

team) and external networks (i.e. unidirectional network from 24 members of SP1 to 88 members of CL)¹.

The SNA results resonate with the interview findings in several aspects, showing how networks *reflect* governance structure. On the execution of governance, formal coordination and conflict resolution is reflected by the higher density of formal networks over informal networks. Moreover, in both sets of internal and external networks, the close correlation between formal and informal networks are found in the same context (i.e. face-to-face or virtual). This can be explained that the coordination process in this ITO dyad is so heavily reliant on formal forums, such as scheduled meetings, that people tend to make informal communications almost only before or after such formal meetings. On the elements of social capital (i.e. inter-organizational linkages, affect, and shared understandings), the importance of formality and professionalism over personal relationships are also revealed by the networks. On one hand, lowest density is found in non-work related personal/social networks within both internal and external networks, indicating the level of affect towards hierarchical characteristics. On the other hand, compared to external networks, in the internal networks, the density is significantly higher, and the correlation of personal/social networks with other types of professional networks is stronger. Thus affect and shared understandings are considered lower in the external networks (i.e. between the vendor and client) in comparison to the internal networks. In summary, the characteristics of hierarchy governance is indeed reflected by the networks.

The findings also illustrates how the network features may *influence* governance structure. The main influence factor is the dispersed geographic locations of client and vendor, manifested as the higher density of virtual networks over face-to-face networks. Meanwhile, the close relation in formal networks between face-to-face and virtual contexts also reflect such location matter, because the same set of scheduled meetings are held both face-to-face and virtually to save travel costs. Such dispersed locations reinforced the hierarchy governance, and hampered the emergence of network governance, as frequent interactions are more difficult when people sit far away from each other.

Despite the reflection and influence between interpersonal networks and perceived governance structure, the case also shows an exception where deviation occurs. Beyond professional relations, close personal friendships are observed between an employee of SP1 and his/her counterparts in CL. This person may potentially become the bridge to transform the ITO governance structure into network governance. However, such extrapolation needs to be confirmed with further studies.

This paper contributes to answer the research question with vendor's perspective. The findings mainly suggest reflection and influence between ITO

¹ In the original paper, SP1 is referred to as Alpha, and CL is referred to as Beta.

governance structure and vendor's internal and external networks, particularly in the context where hierarchy governance dominates. However, deviation is also observed with potential to transform the relationship into network governance. The method and findings of this study can also be applied in different vendors in multi-sourcing relationships, in order to learn about each vendor's internal perspectives hence contribute to the overall multi-sourcing strategy.

4.3 Governance in an ITO dyad

Paper 3 studies the ITO dyad between the client (CL) and one of the vendors (SP1)¹, focusing on network elements of Governance-in-Contract (GiC) and Governance-in-Practice (GiP). Through the mixed methods of qualitative document analysis and SNA, the findings contrast GiC and GiP on the aspect of governance structure, and answer the second sub-question: *How does governance practice deviate from the ITO contract between client and one of the vendors?*

Two of the governance elements, i.e. coordination and inter-organizational linkages, pertain to the web of interactions among participants, which is defined as *practices* of GiP. Other elements, including conflict resolution, extent of trust and extent of shared understandings, relate to each participants' actions in governance and are defined as *praxis* of GiP. A practice-based network embraces *praxis* as nodes, and *practices* as ties. Due to the page restriction of this conference paper, only *practices* are empirically examined in this study.

First, the governance appendix of the ITO contract between CL and SP1 is analyzed for GiC. As a result, the structure of hierarchy governance is identified in GiC, with the document-based feature of coordination and standardized processes for the inter-organizational linkages. The stipulated communication structure is also illustrated with clear hierarchical levels. Then, leveraging the method of SNA, GiP (i.e. only the part of *practices*) is investigated in terms of daily communication networks related to governance. Specifically, network density is compared between different units, to reveal the pattern of inter-organizational linkages; while both communications of technical and non-technical issues are extracted between different hierarchical levels of governance to uncover the coordination between CL and SP1. According to SNA findings, the inter-organizational linkages in GiP show characteristics of network governance contrasting with overwhelming hierarchical governance in GiC, with direct and informal linkages skipping the contractually stipulated intermediaries. Meanwhile, regarding coordination, GiP involves both characteristics of hierarchy and network governance, as different roles in the governance structure adjust their activities on

¹ In the original paper, the company of CL is referred to as NI, and its IT department as DIS; while the company of SP1 is referred to as KIM, and the team exclusively working for the client as KIM1.

the basis of emerging needs instead of strictly sticking to the formal stipulations. Hence, by separating GiC and GiP, the findings reveal the form of hybrid governance with co-existence of hierarchy and network structures, and that these two alternatives of governance structure are only ideal-typical forms.

As to the question of how governance practice deviates from the contract, the findings are mixed. On one hand, the empirical study shows GiC as a reference and guideline for GiP based on the evidence of conformity, to a certain extent, in the coordination patterns. On the other hand, the deviation of GiP from GiC are also observed in various areas, which suggests a direction to modify and improve the governance contract on the basis of daily practice. Thus, regarding the relations between contract and practice, not only the contract needs to be viewed as precedent of practice, but also practice should be learnt as a source of reference for the evaluation and improvement of contract.

As an integral part of the multi-sourcing case study, this paper contributes to the research question from the perspective of one ITO dyad within the multi-sourcing relationship, focusing on the contract and practice. The findings can be generalized to other dyadic relationships, e.g. between client and another vendor, or between the vendors if they have a mutual contract. Especially, extending these findings to a multi-vendor scenario, it should be cautioned that a standard contract may not always work in the governance practice with different vendors, and that the contract cannot be static from the beginning to the end, but needs to be regularly updated during the whole course based on emerging practice.

4.4 Governance of the multi-sourcing triad

Paper 4 finally involves all parties of the multi-sourcing triad in this cases study. Departing from the two governance concepts reviewed in Paper 1, this paper constructed a refined framework aligning the structures and mechanisms of ITO governance. The empirical work is entirely based on qualitative material, revealing the deviation in perception and practice among all parties on the multi-sourcing governance. By illustrating how such deviation occurs together with tension and conflicts in multi-sourcing, this paper answers the last sub-question: *How does practice deviate from perception in the ITO governance among client and multiple vendors?*

The findings begin with the identification of governance mechanisms both in perception and in practice among all multi-sourcing parties, including *contract*, *control*, and the supporting *information system*. Subsequently, the mechanisms are mapped into two possible governance structures for this multi-sourcing relationship, i.e. hierarchy and network governance. On *contract*, the perception is dominated by the structure of hierarchy governance, featured by promissory

contract and guardian vendor model that are commonly agreed; in other words, all parties agree upon the promissory contract in perception, in which the guardian vendor model is adopted with SP1 as the middle link. However, although hierarchy structure is followed by SP1, as they tried to maintain this contractual structure in practice, network structure also emerge between CL and SP2 manifested as psychological contract via direct connections skipping the middle link of SP1. The *control* mechanisms, both in perception and practice, fall into hybrid structure featuring both hierarchy and network characteristics. Perceived control mechanisms such as trust, identities and values are mapped into hierarchy structure, which have in turn influenced related practice. However, discrepancies of perception and practice also emerge. On one hand, although the formal control, as perceived by CL, is generally practiced through regular governance reports and meetings, informal control in form of workarounds are also observable in practice. On the other hand, in perception, CL expected a close partnership between the two suppliers to foster network governance with higher efficiency, but in practice only minimal interactions occur between SP1 and SP2. As to the supporting *information system*, it is perceived to follow a formal design being a coordination tool under a hierarchy structure. Although such system is initiated and followed by SP1 in practice, SP2 uses the system in a more flexible way, creating various workarounds from the system which are actually accommodated by CL. Thus the practice of the information system is also under a mixed hierarchy and network structure.

The elaboration in the last paragraph not only answers the sub-question concerning multi-sourcing governance in perception and in practice, but also brings important contributions to the main research question by addressing upon all participants in this multi-sourcing case. The deviation of perception and practice derives from the governance context itself, which involves each participant's internal characteristics and practices. In this case, the two suppliers' disparity in organizational identities and practices is not compatible with the designed governance featured by hierarchy structure; such structure would need a high level of formality to ensure fluent workflow, but the two suppliers are not able to work under the same process. For future improvement, this multi-sourcing relationship will need to be restructured from the guardian vendor model to a more suitable model, in which the client manages the two suppliers directly without middle links. Extrapolated from this case, if the two (or more) suppliers are similar in organizational identities and practices, guardian vendor model will be more efficient in the multi-sourcing relationship.

5 CONCLUSIONS

This chapter concludes the dissertation. First, the answers to the research question are summarized. Then, both theoretical and practical contributions are clarified. Last but not least, the limitations are pointed out in order to motivate future research.

5.1 Answering the research questions

This section will incorporate key findings for an integrative answer to the main research question:

RQ: How does governance practice deviate from the formal and perceived governance model in IT multi-sourcing?

Before the research question can be answered, the conceptualization of governance must be clarified. Paper 1 fulfilled this purpose and conceptualized ITO governance into governance mechanisms and structure. While all the empirical papers follow the basis of this conceptualization, they also contribute to the theoretical development by enriching the framework with empirical evidences. Especially, the relations between governance structure and governance mechanisms are addressed in the empirical work. Explicitly in Paper 4, different governance mechanisms (i.e. contract, control, and information system) are mapped into different governance structures (i.e. hierarchy and network). Moreover, the context of multi-sourcing has been unfolded as the scope of the empirical setting is gradually expanded from Paper 2 to Paper 4, starting from inside a vendor's organization to the ITO dyad, and finally zooming out to the entire multi-sourcing relationship. Such research design is intended to delineate the governance landscape from different perspectives and across multiple organizational levels. In addition, interpersonal networks are explored as a proxy to certain aspect of governance, especially in Paper 2 and Paper 3, which have illustrated how governance can be reflected and assessed with networks.

Indeed, empirical evidences at all levels suggest the existence of deviations in governance structure, either manifested with a dominant structure with a minor variation, or in form of parallel structures. In Paper 2, traces of evidence on network governance are observed under the dominating hierarchy governance;

while in Paper 3 and Paper 4, the two structures stand in parallel: with hierarchy structure in contract and network structure in practice (Paper 3), or with both structures co-exist in perception and in practice (Paper 4). Such deviation also occurs between multi-sourcing participants. In Paper 2 and Paper 4, the governance characteristics of the two vendors have been contrasted: while hierarchy governance dominates SP1, SP2 has a higher tendency to practice network governance. In addition, Paper 3 and Paper 4 show the complexity and conflicts of governance among different parties, when contract, perception, and practice are simultaneously considered.

Table 11 summarizes the answers to the research question, with the key answers marked in grey cells. This table is organized in two columns, while the left column elaborate findings based on the investigated case, the column on the right offers suggestions for improving governance in a similar context. The key answer to the research question is located under case findings, because the deviation in multi-sourcing governance centres on the observed happenings in the empirical case. The suggestions on the governance structure and mechanisms aim to conceive the ‘ideal’ governance under the same vendor portfolio, thus are related but not intended as direct answers to the research question.

Table 11 Answering the research question

	Case Findings	Suggestions
RQ	<i>How does governance practice deviate from the formal and perceived governance model in IT multi-sourcing?</i>	
Deviation between vendors’ internal governance characteristics	SP1: Hierarchy governance, dominated by contractual mechanisms (Paper 2) SP2: Network governance, dominated by relational mechanisms (Paper 4)	Each participant’s internal governance needs to be scrutinized in addition to inter-organizational governance.
Deviation of governance structures and mechanisms in the inter-organizational relationships	CL – SP1: hierarchy structure in contract and network structure in practice (Paper 3), CL – SP1, SP2: with both structures co-exist in perception and in practice among all three participants (Paper 4)	Consistent governance structures are needed in contract, in perception, and in practice. Contractual governance mechanisms are suggested between CL and SP1, and relational governance between CL and SP2.

5.2 Theoretical contribution

From a theoretical perspective, this dissertation contributes to the understanding of ITO governance in three domains: the governance of ITO in general, the governance of multi-sourcing in particular, and the novel attempt in research methodology.

For the domain of ITO governance, the literature review (Paper 1) has synthesized prior knowledge into two important research strands, i.e. governance structure and governance mechanisms, while identifying the lack of integrated frameworks to incorporate both concepts of governance under certain contexts. In this study, I proposed a research framework integrating both governance structure and governance mechanisms, through the dialogue between literature review and empirical work. Initially, Miranda and Kavan's (2005) MoG model was used as a theoretical scaffolding (Sarker et al., 2013; Walsham, 1995), which is expanded and revised into my own theoretical framework (see Table 4 in Chapter 2). This framework is gradually constructed while the empirical context is being zoomed out from a single vendor to the whole multi-sourcing triad, and it illustrates how different mechanisms emerge under different governance structures in the post-adoption stage of outsourcing. Hence, the MoG model is not only revised with empirical evidence on the post-adoption stage, but also enriched with two more mechanisms in addition to contract, i.e. control and supporting information system (see Paper 4). Moreover, this study also expanded the MoG model, which was originally intended only for inter-organizational context, by adding the intra-organizational scope (Paper 2).

Besides MoG model, this study also contributes to the heated discussion on the substitution and complementarity of contractual and relational governance mechanisms (Huber et al., 2013; Lioliou et al., 2014; Poppo & Zenger, 2002; Tiwana, 2004), by addressing the relationship between governance structure and governance mechanisms. I argue that different forms of governance mechanisms will emerge under different governance structures. For instance, the result of Paper 2 discovered higher density of formal, in comparison to informal, interpersonal networks as a typical form of contractual governance mechanism, when formal and informal networks have high level of correlation; while prior research (e.g. Kratzer, Gemuenden & Lettl 2008) suggests denser informal interactions when formal and informal networks show only marginal correlations. Such discrepancy in findings confirms my argument on the fit between governance mechanisms and governance structure. In my case, under hierarchy governance, contractual mechanisms prevail; whereas in other contexts of network governance (e.g. Kratzer, Gemuenden & Lettl 2008), relational mechanisms thrive and overwhelm contractual mechanisms. Therefore, the substitution and/or complementarity of contractual and relational governance depends on the governance structure as an

overarching context. Furthermore, this study also contribute to the understanding of ITO governance by distilling the *practice* of governance from the general concept. I have compared practice from contract and perception of governance (see Paper 3, Paper 4), and uncovered the consistencies and discrepancies in the same case. Such comparison probes into deeper nuances of ITO governance, and enriches the concept with multiple dimensions and aspects.

Through the analysis on governance in both ITO research and reference disciplines (Paper 1), another recognized research gap is the relations between the chosen governance and the characteristics of the involved firms. This is particularly relevant to the governance of multi-sourcing, where the increased number of participating firms would inevitably introduce heterogeneity into the relationship. In this study, Paper 2 discusses governance from a vendor's perspective, which is further associated with the vendor's interpersonal networks. Although the paper involves only one vendor in the investigation, it shows how a firm's internal networks can reflect governance structure, thus contributes to multi-sourcing governance with a method to assess the heterogeneous characteristics of participants. On this basis, the fit of vendor portfolio and the multi-sourcing governance structure is explored in Paper 4, which further contributes to close this research gap in a multi-sourcing scenario. Specifically, the misfit between vendor portfolio and governance structure induces the divergence between perception and practice, which ultimately results in the conflict and tension observed in the multi-sourcing relationship. This finding also has implication on vendor selection in multi-sourcing, thus closes the feedback loop for the "How" sub-stage of ITO (See Figure 13).

The composition of four research papers contributes to multi-sourcing research by illustrating the benefits of zooming in and out from the multilateral relationships to construct the overall picture with different aspects and scopes. It underlines that to study multi-sourcing, the basic input from each dyadic relationship should not be overlooked. In essence, vendor's task allocation and interdependency are unique features of multi-sourcing, which should be carefully investigated on the basis of general understanding of dyadic ITO relationships. Here it is also worth mentioning the examined role of supporting information systems in multi-sourcing (Paper 4), as an integral part of governance structure. It is particularly relevant to multi-sourcing, due to the increase of complexity in communication and cooperation. In my findings, vendors' different practices on such system are related to their organizational characteristics. This is consistent with early research on interaction theory (Markus, 1983) between systems and organizational contexts, and brings new insights into the domain of multi-sourcing research.

Methodologically, this study has attempted a novel approach with mixed methods of SNA and qualitative inquiries under an interpretive stance. While SNA is used to extract social relationships with a network perspective, qualitative

inquiries are leveraged to contextually investigate the dynamic and fuzzy phenomenon of governance; the findings of these two methods are then combined in the process of interpretive integration. This attempt confirms the viability and benefit of such approach, and provides a rich illustration of methodological conduct for researchers who would like to perform mixed methods in similar ways.

5.3 Practical contribution

For practitioners, the value of this study also lies in ITO in general and multi-sourcing in particular. On ITO governance, the conceptualization and methodology of the case study both have implication for practice. On one hand, the concept of governance is deconstructed into governance structure and governance mechanisms, as well as their interrelations. Such deconstruction enables better assessment of the status quo on ITO governance, and facilitates practitioners to pinpoint problem areas with greater clarity. On the other hand, the SNA exemplified in this study is not only an effective method for research, but also a useful tool to visually illustrate different organizational networks, whether governance related or in other areas. Specifically for governance, the analysis of networks can reveal the day-to-day practice of participants, thus supports to contrast governance in contract, perception and practice. With this information, decision makers can find areas for potential improvement, where the illustration of networks does not match with expectations, especially during the negotiation for ITO contract updates.

Particularly on multi-sourcing, the elaboration of the case and the findings of the study can help practitioners to build awareness on the choice of multi-sourcing models. First, different multi-sourcing models are discussed in the reference of prior literature, which can be utilized by practitioners during the consideration of their own multi-sourcing model. Then, the empirical case presents situations where possible conflicts would occur due to the discrepancy of perception and practice, as well as misfit of the outsourcing governance and vendor structure, thus informing practitioners to avoid such unnecessary conflicts with effective adjustments in governance. The decision of vendor positioning, including multi-sourcing model, task allocation, and vendor interdependency (Bapna et al., 2010), must be based on contextual characteristics across different levels, in order to mitigate or even avoid the discrepancies and conflicts in governance. Last but not least, the study specifically implies to the client part, that multi-sourcing is not a simple “pay-and-buy” business. After the selection of vendors, the client not only need to enhance their own capabilities to manage the relationships, but also to learn about and adapt the governance structure to fit vendors’ internal characteristics. Multi-sourcing governance is not “carved in stones” once the contract is signed,

but rather requires frequent reviews and adjustments to fit with the evolving client-vendor and vendor-vendor relationships. This view is in line with Lempinen and Rajala's (2014) practical suggestions to IS managers in the client organization, who has the responsibilities to facilitate the interactions and avoid conflicts between multiple parties.

For this particular case of my empirical study, the optimized positioning of vendors is extrapolated from the empirical learnings (see Table 12), differing from the status quo at the time of data collection. It is worth mentioning that in a different context, e.g. with a different vendor portfolio, the positioning of vendors should be different from the suggestions in Table 12. This is to say, that the selection of a multi-sourcing model, as introduced in Chapter 2, needs to fit its context. Although the empirical work of this case study finished in 2012, I have kept in contact with the involved companies afterwards. As an update, the company CL started a project to insource the Service Desk from SP1 in 2015, so that multiple vendors can be directly managed by the client itself, instead of being managed through SP1. Therefore, some key findings and recommendations of this study has indeed been taken into consideration and business practice.

Table 12 Vendor structure for the multi-sourcing case

	<i>Case observations</i>	<i>Suggested structure</i>
Multi-sourcing Model	<p><i>Guardian Vendor Model¹</i></p>	<p><i>Direct Model</i></p>
Task Allocation	SP2 takes over part of SP1's previous tasks, while still being governed under SP1. (Paper 4)	The tasks of SP1 and SP2 should be separated, and both governed directly by CL.
Vendors' Interdependency	<i>High</i> According to the Guardian Vendor Model (Paper 4)	<i>Low</i> To mitigate conflicts caused by the internal differences of vendors

¹ The dashed arrow line in the figure illustrates the interaction between CL and SP2, which is outside the scope of the multi-sourcing contract (see Paper 4).

5.4 Limitations and future research

Although the findings are interesting and valuable for both research and practice, the limitation areas must be acknowledged where future research is encouraged.

First, the design of single case study, although common in both SNA and qualitative research, is still considered as a limitation in this study. Indeed, focusing on a single site has enabled a deep investigation with rich contextual information; to avoid the danger of over-generalization, the inference of findings must bear the specific context into consideration, which is in turn an essential part of findings. Thus, for other contexts (e.g. with different sized participants and contracts, different numbers of client and vendors, different geographical locations, etc.) the generalizability of this study is limited and uncertain. To increase the scope of generalization, further studies are needed in other empirical sites, especially those with different multi-sourcing models and characteristics of participants.

The second limitation lies in the cross-sectional nature of the case study. Although the empirical work lasted for half a year in 2012, it is still considered as a snapshot in the entire history of this multi-sourcing relationship. Before the beginning of this research, the cooperation between the client and each vendor had already lasted for several years; after I left the empirical site, the multi-sourcing relationship also continued for more years. Therefore, the findings of this study relies on the happenings during the data collection period, and the retrospective memories of interviewees on the past years. Considering that the perceptions and practice may evolve during the entire lifecycle of the relationship, a longitudinal study tracking the full contract period is necessary in future studies to strengthen the reliability of findings.

Last but not least, there should be room to improve the design of the SNA questionnaire used in this study. Especially in the QAP analysis, the high absolute correlation values should have been caused by the design of questionnaire, in which the multiplexity of network is selected by respondents based on the same pool of candidates. For instance, each respondent was asked to indicate different interaction types with the 5 most frequently contacted colleagues whom she/he already selected in the last question. This design was mainly caused by the limitation of the survey tool Webropol, which does not seamlessly support matrix-like questions for SNA. However, as the related findings are on the basis of cross-network comparison instead of absolute coefficient values, the extrapolations are still valid despite this limitation. Nevertheless, in future studies with similar SNA purpose, the tool to conduct questionnaire needs to be reconsidered, in order to support data collection and analysis more efficiently.

REFERENCES

- Adler, P. S. (2001). Market, Hierarchy, and Trust: The Knowledge Economy and the Future of Capitalism. *Organization Science*, 12 (2), 215–234.
- Alagheband, F. K. – Rivard, S. – Wu, S. – Goyette, S. (2011). An assessment of the use of Transaction Cost Theory in information technology outsourcing. *The Journal of Strategic Information Systems*, 20 (2), 125–138.
- Applegate, L. M. – Montealegre, R. (1991). Eastman Kodak Co.: Managing Information Systems Through Strategic Alliances. *Harvard Business School Case*, 9-192-030.
- Aubert, B. A. – Houde, J.-F. – Patry, M. – Rivard, S. (2012). A multi-level investigation of information technology outsourcing. *The Journal of Strategic Information Systems*, 21 (3), 233–244.
- Avison, D. E. – Fitzgerald, G. (1995). *Information Systems Development: Methodologies, Techniques and Tools* (2nd ed.). Cambridge: McGraw-Hill International (UK) Limited.
- Bapna, R. – Barua, A. – Mani, D. – Mehra, A. (2010). Research Commentary — Cooperation, Coordination, and Governance in Multisourcing: An Agenda for Analytical and Empirical Research. *Information Systems Research*, 21 (4), 785–795.
- Bapna, R. – Gupta, A. – Ray, G. – Singh, S. (2013). Specialization, Integration, and Multi-sourcing: A study of Large IT Outsourcing Projects. In: *ICIS 2013 Proceedings*.
- Barnes, J. A. (1954). Class and Committees in a Norwegian Island Parish. *Human Relations*, 7 (1), 39–58.
- Beck, R. – Schott, K. – Gregory, R. W. (2011). Mindful management practices in global multivendor ISD outsourcing projects. *Scandinavian Journal of Information Systems*, 23 (2), 5–28.
- Benbasat, I. (1987). The Case Research Strategy in Studies of Information Systems Case Research. *MIS Quarterly*, 3 (3), 369–386.
- Bhattacharya, S. – Gupta, A. – Hasija, S. (2014). Joint Product Improvement by Client and Customer Support Center: The Role of Gain-Share Contracts in Coordination. *Information Systems Research*, 25 (1), 137–151.

- Brass, D. – Galaskiewicz, J. – Greve, H. – Tsai, W. (2004). Taking stock of networks and organizations: A multilevel perspective. *The Academy of Management Journal*, 47 (6), 795–817.
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative Research*, 6 (1), 97–113.
- Chapman, S. (2008). Shell signs \$4B multisupplier outsourcing deal. *ComputerWorld*. <<http://www.computerworld.com/article/2536412/it-management/shell-signs--4b-multisupplier-outsourcing-deal.html>>, retrieved on 30.3.2015.
- Chen, W. – Hirschheim, R. (2004). A paradigmatic and methodological examination of information systems research from 1991 to 2001. *Information Systems Journal*, 14 (3), 197–235.
- Chen, Y. – Bharadwaj, A. (2009). An Empirical Analysis of Contract Structures in IT Outsourcing. *Information Systems Research*, 20 (4), 484–506.
- Cheon, M. J. – Grover, V. – Teng, J. T. C. (1995). Theoretical perspectives on the outsourcing of information systems. *Journal of Information Technology*, 10 (4), 209–219.
- Choudhury, V. – Sabherwal, R. (2003). Portfolios of control in outsourced software development projects. *Information Systems Research*, 13 (3), 291–314.
- Chua, C. E. H. – Lim, W. K. – Soh, C. – Sia, S. K. (2012). Enacting clan control in complex IT projects: a social capital perspective. *MIS Quarterly*, 36 (2), 577–600.
- Clark, T. D. – Zmud, R. W. – McCray, G. E. (1995). The outsourcing of information services: transforming the nature of business in the information industry. *Journal of Information Technology*, 10, 221–237.
- Cronk, J. – Sharp, J. (1995). A framework for deciding what to outsource in information technology. *Journal of Information Technology*, 10 (4), 259–267.
- Cross, J. (1995). IT outsourcing: British Petroleum's competitive approach. *Harvard Business Review*, 73 (3), 94–102.
- Cullen, S. – Seddon, P. B. – Willcocks, L. P. (2005). IT outsourcing configuration: Research into defining and designing outsourcing arrangements. *The Journal of Strategic Information Systems*, 14 (4), 357–387.
- Currie, W. L. (1998). Using multiple suppliers to mitigate the risk of IT outsourcing at ICI and Wessex Water. *Journal of Information Technology*, 13(3), 169–180.
- De Looff, L. A. (1995). Information systems outsourcing decision making: a framework organizational theories and case studies. *Journal of Information Technology*, 10 (4), 281–297.

- Dibbern, J. – Goles, T. – Hirschheim, R. – Jayatilaka, B. (2004). Information systems outsourcing: a survey and analysis of the literature. *The DATA BASE for Advances in Information Systems*, 35 (4), 6–102.
- Eisenhardt, K. (1989). Building theories from case study research. *Academy of Management Review*, 14 (4), 532–550.
- Eriksson, P. – Kovalainen, A. (2008). *Qualitative Methods in Business Research*. London: Sage Publications.
- Fink, L. (2010). Information technology outsourcing through a configurational lens. *The Journal of Strategic Information Systems*, 19 (2), 124–141.
- Fridgen, G. – Mueller, H. (2011). An approach for portfolio selection in multi-vendor IT outsourcing. In: *ICIS 2011 Proceedings*.
- Gartner. (2015). IT Outsourcing. *Gartner IT Glossary*. <<http://www.gartner.com/it-glossary/it-outsourcing>>, retrieved on 22.1.2015.
- Gefen, D. – Wyss, S. – Lichtenstein, Y. (2008). Business familiarity as risk mitigation in software development outsourcing contracts. *MIS Quarterly*, 32 (3), 531–551.
- Gonzalez, R. – Gasco, J. – Llopis, J. (2006). Information systems outsourcing: A literature analysis. *Information & Management*, 43 (7), 821–834.
- Goo, J. – Kishore, R. – Rao, H. – Nam, K. (2009). The role of service level agreements in relational management of information technology outsourcing: An empirical study. *MIS Quarterly*, 33 (1), 119–145.
- Gopal, A. – Gosain, S. (2010). Research Note —The Role of Organizational Controls and Boundary Spanning in Software Development Outsourcing: Implications for Project Performance. *Information Systems Research*, 21 (4), 960–982.
- Gopal, A. – Sivaramakrishnan, K. – Krishnan, M. S. – Mukhopadhyay, T. (2003). Contracts in offshore software development: An empirical analysis. *Management Science*, 49 (12), 1671–1683.
- Greene, J. C. – Caracelli, V. J. – Graham, W. F. (1989). Toward a Conceptual Framework for Mixed-Method Evaluation Designs. *Educational Evaluation and Policy Analysis*, 11 (3), 255–274.
- Gregor, S. (2006). The nature of theory in information systems. *Mis Quarterly*, 30 (3), 611–642.
- Grover, V. – Cheon, M. J. – Teng, J. T. C. (1994a). A descriptive study on the outsourcing of information systems functions. *Information & Management*, 27 (1), 33–44.
- Grover, V. – Cheon, M. – Teng, J. (1994b). An evaluation of the impact of corporate strategy and the role of information technology on IS functional outsourcing. *European Journal of Information Systems*, 3 (3), 179–190.

- Guba, E. G. – Lincoln, Y. S. (1994). Competing Paradigms in Qualitative Research. In: *Handbook of Qualitative Research*, ed. by K. Denzin – Y. S. Lincoln, 105–117. Thousand Oaks: Sage Publications.
- Gummesson, E. (2007). Case study research and network theory: birds of a feather. *Qualitative Research in Organizations and Management: An International Journal*, 2 (3), 226–248.
- Hätönen, J. – Eriksson, T. (2009). 30+ years of research and practice of outsourcing – Exploring the past and anticipating the future. *Journal of International Management*, 15 (2), 142–155.
- Heiskanen, A. – Newman, M. – Eklin, M. (2008). Control, trust, power, and the dynamics of information system outsourcing relationships: A process study of contractual software development. *The Journal of Strategic Information Systems*, 17 (4), 268–286.
- Hirschheim, R. (1992). Information Systems Epistemology: An Historical Perspective. In: *Information Systems Research: Issues, Methods and Practical Guidelines*, ed. by R. Galliers, 28–60. Oxford: McGraw-Hill Education - Europe.
- Huber, T. L. – Fischer, T. A. – Dibbern, J. – Hirschheim, R. (2013). A Process Model of Complementarity and Substitution of Contractual and Relational Governance in IS Outsourcing. *Journal of Management Information Systems*, 30 (3), 81–114.
- ISG. (2014). ISG Index: Global Outsourcing Industry On Track For Strong 2014, Despite 3Q Softness. *Information Service Group (ISG) Press Release*. <<http://www.isg-one.com/web/media-center/press/141014-US.asp>>, retrieved on 1.5.2016.
- ISG. (2015). ISG Outsourcing Index®: 3Q15 Contract Volume Surges, Value Remains Flat. *Information Service Group (ISG) Press Release*. <<http://www.isg-one.com/web/media-center/press/151015-US.asp>>, retrieved on 1.5.2016.
- Kilduff, M. – Tsai, W. (2003). *Social networks and organizations*. London, Thousand Oaks, New Delhi: Sage Publications.
- Kim, H. J. – Shin, B. – Lee, H. (2013). The mediating role of psychological contract breach in IS outsourcing: inter-firm governance perspective. *European Journal of Information Systems*, 22 (5), 529–547.
- Kirsch, L. J. – Ko, D. G. – Haney, M. H. (2009). Investigating the Antecedents of Team-Based Clan Control: Adding Social Capital as a Predictor. *Organization Science*, 21 (2), 469–489.
- Koh, C. – Ang, S. – Straub, D. W. (2004). IT Outsourcing Success: A Psychological Contract Perspective. *Information Systems Research*, 15 (4), 356–373.

- Krackhardt, D. (1990). Assessing the political landscape: Structure, cognition, and power in organizations. *Administrative Science Quarterly*, 35, 342–369.
- Kratzer, J. – Gemuenden, H. G. – Lettl, C. (2008). Revealing dynamics and consequences of fit and misfit between formal and informal networks in multi-institutional product development collaborations. *Research Policy*, 37 (8), 1356–1370.
- Krzeminska, A. – Hoetker, G. – Mellewigt, T. (2013). Reconceptualizing Plural Sourcing. *Strategic Management Journal*, 34, 1614–1627.
- Lacity, M. C. – Hirschheim, R. (1993). The information systems outsourcing bandwagon. *Sloan Management Review*, 35 (1), 73–86.
- Lacity, M. C. – Khan, S. – Willcocks, L. P. (2009). A review of the IT outsourcing literature: Insights for practice. *The Journal of Strategic Information Systems*, 18 (3), 130–146.
- Lacity, M. C. – Khan, S. – Yan, A. – Willcocks, L. P. (2010). A review of the IT outsourcing empirical literature and future research directions. *Journal of Information Technology*, 25 (4), 395–433.
- Lacity, M. C. – Willcocks, L. P. – Khan, S. (2011). Beyond Transaction Cost Economics: Towards an endogenous theory of Information Technology Outsourcing. *The Journal of Strategic Information Systems*, 20 (2), 139–157.
- Lee, J.-N. – Miranda, S. M. – Kim, Y.-M. (2004). IT Outsourcing Strategies: Universalistic, Contingency, and Configurational Explanations of Success. *Information Systems Research*, 15 (2), 110–131.
- Lempinen, H. – Rajala, R. (2014). Exploring multi-actor value creation in IT service processes. *Journal of Information Technology*, 29 (2), 170–185.
- Levina, N. – Ross, J. W. (2003). From the Vendor's Perspective: Exploring the Value Proposition in Information Technology Outsourcing. *MIS Quarterly*, 27 (3), 331–364.
- Levina, N. – Su, N. (2008). Global multisourcing strategy: The emergence of a supplier portfolio in services offshoring. *Decision Sciences*, 39 (3), 541–570.
- Lin, T. (2013). It Outsourcing At The Stage Of Psychological Contract: Governance-In-Practice And Governance-In-Contract. In: *ECIS 2013 Proceedings*.
- Lin, T. – Hekkala, R. (2014). Exploring IT Outsourcing Governance with Vendor's Interpersonal Networks: A Case Study. In: *Governing Sourcing Relationships. A Collection of Studies at the Country, Sector and Firm Level*, ed. by J. Kotlarsky – I. Oshri – L. P. Willcocks, 18–34. Cham: Springer International Publishing.

- Lin, T. – Vaia, G. (2015). The Concept of Governance in IT Outsourcing: A Literature Review. In *ECIS 2015 Proceedings*.
- Lioliou, E. – Zimmermann, A. – Willcocks, L. – Gao, L. (2014). Formal and relational governance in IT outsourcing: substitution, complementarity and the role of the psychological contract. *Information Systems Journal*, 24 (6), 503–535.
- Loh, L. – Venkatraman, N. (1992). Diffusion of Information Technology Outsourcing: Influence Sources and the Kodak Effect. *Information Systems Research*, 3 (4), 334–358.
- Mahnke, V. – Wareham, J. – Bjorn-Anderson, N. (2008). Offshore middlemen: transnational intermediation in technology sourcing. *Journal of Information Technology*, 23, 18–30.
- Mani, D. – Barua, A. – Whinston, A. B. (2006). Successfully governing business process outsourcing relationships. *MIS Quarterly Executive*, 5 (1), 15–29.
- Mani, D. – Barua, A. – Whinston, A. B. (2010). An empirical analysis of the impact of information capabilities design on business process outsourcing performance. *MIS Quarterly*, 34 (1), 39–62.
- Mani, D. – Barua, A. – Whinston, A. B. (2012). An empirical analysis of the contractual and information structures of business process outsourcing relationships. *Information Systems Research*, 23 (3), 618–634.
- Mani, D. – Barua, A. – Whinston, A. B. (2013). Outsourcing contracts and equity prices. *Information Systems Research*, 24 (4), 1028–1049.
- Markus, M. L. (1983). Power , Politics , and MIS Implementation. *Communications of the ACM*, 26 (6), 430–444.
- Marsden, P. (2011). Survey Methods for Network Data. In: *The Sage Handbook of Social Network Analysis*, ed. by J. Scott – P. Carrington, 370–388. London: Sage Publications.
- Mason, J. (2006). Mixing methods in a qualitatively driven way. *Qualitative Research*, 6 (1), 9–25.
- Mingers, J. (2001). Combining IS research methods: towards a pluralist methodology. *Information Systems Research*, 12 (3), 240–259.
- Miranda, S. M. – Kavan, C. B. (2005). Moments of governance in IS outsourcing: conceptualizing effects of contracts on value capture and creation. *Journal of Information Technology*, 20 (3), 152–169.
- Mitchell, J. C. (1974). Social Networks. *Annual Review of Anthropology*, 3, 279–299.
- Moisander, J. – Valtonen, A. – Hirsto, H. (2009). Personal interviews in cultural consumer research – post-structuralist challenges. *Consumption Markets & Culture*, 12 (4), 329–348.

- Moran-Ellis, J. – Alexander, V. D. – Cronin, A. – Dickinson, M. – Fielding, J. – Sleney, J. – Thomas, H. (2006). Triangulation and integration: processes, claims and implications. *Qualitative research*, 6 (1), 45-59.
- Mugurusi, G. – De Boer, L. (2013). What follows after the decision to offshore production? *Strategic Outsourcing: An International Journal*, 6 (3), 213–257.
- Myers, M. D. (2013). *Qualitative Research in Business & Management* (2nd ed.). London: Sage Publications.
- Myers, M. D. – Avison, D. E. (2002). *Qualitative Research in Information Systems*. London: Sage Publications.
- Myers, M. D. – Klein, H. . (2011). A Set of Principles for Conducting Critical Research in Information Systems. *MIS Quarterly*, 35 (1), 17–36.
- Myers, M. D. – Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and Organization*, 17 (1), 2–26.
- Olsson, H. – Conchúir, E. – Ågerfalk, P. – Fitzgerald, B. (2008). Two-stage offshoring: An investigation of the Irish bridge. *MIS Quarterly*, 32 (2), 257–279.
- Orlikowski, W. J. – Baroudi, J. (1991). Studying Information Technology in Organizations: Research Approaches and Assumptions. *Information Systems Research*, 2 (1), 1–28.
- Orlikowski, W. J. – Iacono, C. (2001). Desperately seeking the “IT” in IT research: a call to theorizing the IT artifact. *Information Systems Research*, 12 (2), 121–134.
- Oshri, I. – Kotlarsky, J. – Willcocks, L. P. (2015). *The Handbook of Global Outsourcing and Offshoring* (3rd ed.). London: Palgrave Macmillan.
- Plugge, A. – Janssen, M. (2014). Governance of Multivendor Outsourcing Arrangements: A Coordination and Resource Dependency View. In: *Governing Sourcing Relationships. A Collection of Studies at the Country, Sector and Firm Level*, ed. by J. Kotlarsky – I. Oshri – L. P. Willcocks, 78–97. Cham: Springer International Publishing.
- Poppo, L. – Zenger, T. (2002). Do formal contracts and relational governance function as substitutes or complements? *Strategic Management Journal*, 23 (8), 707–725.
- Powell, W. W. (1990). Neither Market Nor Hierarchy: Network Forms of Organization. *Research in Organizational Behavior*, 12, 295–336.
- Puranam, P. – Gulati, R. – Bhattacharya, S. (2013). How much to make and how much to buy? An analysis of optimal plural sourcing strategies. *Strategic Management Journal*, 34, 1145–1161.
- Rank, O. N. (2008). Formal structures and informal networks: Structural analysis in organizations. *Scandinavian Journal of Management*, 24 (2), 145–161.

- Ravishankar, M. N. – Pan, S. L. – Leidner, D. E. (2011). Examining the strategic alignment and implementation success of a KMS: A subculture-based multilevel analysis. *Information Systems Research*, 22 (1), 39–59.
- Rousseau, D. – Parks, J. (1993). The contracts of individuals and organizations. *Research in Organizational Behavior*, 15, 1–43.
- Sabherwal, R. (1999). The role of trust in outsourced IS development projects. *Communications of the ACM*, 42 (2), 80–86.
- Sarker, S. – Xiao, X. – Beaulieu, T. (2013). Qualitative Studies in Information Systems: A Critical Review and Some Guiding Principles. *MIS Quarterly*, 37 (4), iii–xviii.
- Saunders, C. – Gebelt, M. – Hu, Q. (1997). Achieving Success in Information Systems Outsourcing. *California Management Review*, 39 (2), 63–79.
- Schott, K. (2011). Vendor-Vendor knowledge transfer in global ISD outsourcing projects: Insights from a German case study. In: *PACIS 2011 Proceedings*.
- Scott, J. (2013). *Social Network Analysis* (3rd ed.). London: Sage Publications.
- Silverman, D. (2006). *Interpreting qualitative data: methods for analyzing talk, text, and interaction* (3rd Ed.). London, Thousand Oaks, New Delhi: Sage Publications.
- Srivastava, S. C. – Teo, T. S. H. (2012). Contract Performance in Offshore Systems Development: Role of Control Mechanisms. *Journal of Management Information Systems*, 29 (1), 115–158.
- Su, N. – Levina, N. (2011). Global multisourcing strategy: Integrating learning from manufacturing into IT service outsourcing. *IEEE Transactions on Engineering Management*, 58 (4), 717–729.
- Thorogood, A. – Yetton, P. – Vlastic, A. – Spiller, J. (2004). Raise your glasses – the water’s magic! Strategic IT at SA Water: a case study in alignment, outsourcing and governance. *Journal of Information Technology*, 19 (2), 130–139.
- Tiwana, A. (2004). Beyond the black box: knowledge overlaps in software outsourcing. *Software, IEEE*, 21 (5), 51–58.
- Tiwana, A. (2010). Systems Development Ambidexterity: Explaining the Complementary and Substitutive Roles of Formal and Informal Controls. *Journal of Management Information Systems*, 27 (2), 87–126.
- Tsai, W. – Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal*, 41 (4), 464–476.
- Venkatesh, V. – Brown, S. A. – Bala, H. (2013). Bridging the qualitative-quantitative divide - Guidelines for conducting mixed methods research in information systems. *MIS Quarterly*, 37 (1), 21–54.

- Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*, 4, 74–81.
- Wang, E. (2002). Transaction attributes and software outsourcing success: an empirical investigation of transaction cost theory. *Information Systems Journal*, 12 (2), 153–181.
- Watjatrakul, B. (2005). Determinants of IS sourcing decisions: A comparative study of transaction cost theory versus the resource-based view. *The Journal of Strategic Information Systems*, 14 (4), 389–415.
- Weill, P. (2004). Don't just lead, govern: How top-performing firms govern IT. *MIS Quarterly Executive*, 3 (1), 1–17.
- Wiener, M. – Saunders, C. (2014). Forced cooptation in IT multi-sourcing. *The Journal of Strategic Information Systems*, 23 (3), 210–225.
- Williamson, O. E. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press.
- Williamson, O. E. (1979). Transaction-cost economics: the governance of contractual relations. *Journal of Law and Economics*, 22 (2), 232–261.
- Williamson, O. E. (1986). *Economic Organization: Firms, Markets, and Policy Control*. New York: New York University Press.
- Williamson, O. E. (1994). Transaction cost economics and organization theory. In: *The Handbook of Economic Sociology*, ed. by N. J. Smelser – R. Swedberg, 77-107. Princeton: Princeton University Press.
- Yin, R. K. (2014). *Case Study Research: Design and Methods* (4th ed.). Thousand Oaks: Sage Publications.