2011

Understanding Online Sourcing Decisions From The Service Clients' Perspective: An Integrative Theoretical Framework

Baozhou Lu
Louisiana State University and Agricultural and Mechanical College

UNDERSTANDING ONLINE SOURCING DECISIONS FROM THE SERVICE CLIENTS' PERSPECTIVE: AN INTEGRATIVE THEORETICAL FRAMEWORK

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Interdepartmental Program in Business Administration
(Information Systems and Decision Sciences)

by
Baozhou Lu
B.S., Fudan University, 2001
M.S., Fudan University, 2004
August 2011

DEDICATION

To my parent, my wife, Hui

and

To my Children

ACKNOWLEDGEMENTS

I would like first to thank my advisor, Dr. Rudy Hirschheim, for his continual guidance, support, and patience throughout the whole journey. I will forever be indebted to him for his advice, knowledge, innovative thought, and inspiration. I would like to also thank Dr. Andy Schwarz, for his time, insight, and valuable inputs to my work. I am also sincerely grateful to my other committee members: Dr. Suzanne Pawlowski, Dr. Jim Van Scotter, and Dr. David E. Dismukes. I will be always benefiting a lot from Dr. Pawlowski's help on the qualitative method and of Dr. Van Scotter's tutoring on the quantitative one.

Next, I want extend my special thanks to Dr. Ye-Sho Chen, who is not only a professor to me, but more like a mentor and friend. He has been provided tremendous help, support, and guidance for my study and life here in Baton Rouge. Mr. Kerry Brandon, the president of Select Automation Inc, is another person who I would express my sincere appreciation. He offered me the summer internship opportunity and financial support for my study.

I also owe many thanks to Mr. Ian Ippolito, the president of vWorker, for his allowance and help to collecting data over his company's website. Without your help, there will be no this dissertation.

I am also grateful to my family, my wife, my son and my unborn daughter. You are always such precious gifts to me and make my life more meaningful.

Lastly, I want to express my thanks to other faculty members, especially Dr. Helmut Schneider and Dr. Robert T. Justis, to my ISDS colleagues here, Jung, Madhu, Colleen, David, and Santiago, and to all other friends who have lent me help and supported here.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

In this study we empirically examine a new global phenomenon - online sourcing – with a quantitative research method. Online sourcing is the newest development in outsourcing recently that uses Internet as the primary sourcing platform to approach the global sourcing of services. We believe that the emergence of online sourcing will fundamentally change the way work is done. Thus, gaining a deep understanding of the adoption of online sourcing becomes particularly important. Drawing upon theories of firms including transaction cost theory, we propose an integrative theoretical framework for the understanding of online sourcing decisions from the service clients' perspective. The research model is examined with the data collected from an online sourcing platform. Our findings suggest the integrative theoretical framework rather than single perspective in understanding online sourcing decisions. Moreover, the study discloses how outsourcing decision attributes grounded in theories are interrelated within an integrative theoretical framework, as well as the relative importance of each theoretical perspective. Finally implications to theory, practice, business and society are discussed.

CHAPTER 1. INTRODUCTION

"All these companies grew up in the Internet age and were designed to take advantage of the networked world. But now the productive potential of millions of plugged-in enthusiasts is attracting the attention of old-line businesses, too. For the last decade or so, companies have been looking overseas, to India or China, for cheap labor. But now it doesn't matter where the laborers are – they might be down the block, they might be in Indonesia – as long as they are connected to the network. Technological advances in everything from product design software to digital video cameras are breaking down the cost barriers that once separated amateurs from professionals. Hobbyists, part-timers, and dabblers suddenly have a market for their efforts, as smart companies in industries as disparate as pharmaceuticals and television discover ways to tap the latent talent of the crowd. The labor isn't always free, but it costs a lot less than paying traditional employees. It's not outsourcing; it's crowdsourcing. "

- Jeff Howe (2008)

1.1 The Emergence of Online Sourcing

Outsourcing has existed for decades since Kodak turned over its information systems (IS) function to IBM, DEC and Businessland in 1989. Since then, outsourcing has experienced tremendous growth, recognized as an acceptable, indeed fashionable, way to meet an organization's IT needs by both large and small companies (Arnett & Jones, 1994). And its landscape has become more and more complex: from outsourcing to offshoring to domestic outsourcing to application service providers (ASPs) to nearshore outsourcing to open sourcing. Today, companies support many of their business processes by sourcing services to third-party providers located all over the world.

The newest developments in outsourcing recently are to use Internet as the primary sourcing platform to approach the global sourcing of services and for the settlement of outsourcing deals. Examples of these online sourcing platforms (OSPs) include vWorker (former RentACoder), E-lance, Guru.com, TopCoder, Amazon's Mechanical Turk platform (AMT), and InnoCentive. In contrast with previous trends of outsourcing, which are often marked as the very expensive and long-term "mega-deals" among big organizations, this new trend of outsourcing is often characterized by relatively small and more manageable contracts (Gefen & Carmel, 2008). This is why some scholars have tried to term it as "microsourcing" (Obal 2009), or as "crowdsourcing" (Howe, 2006). Nevertheless, we have noticed the potentials of this new trend of outsourcing to be exploited by the business organizations, even big one. Thus, here we term these new forms of outsourcing as *online sourcing* considering its nature of the online practices.

So far, online sourcing is still in the early adoption phase but has demonstrated a very promising future. According to a report by Smartsheet.com (Frei, 2009), there have been at least 50 online sourcing vendors by 2009, as indicated in Figure A-1 in Appendix A. Table 1-1 summarizes the primary statistics of ten major online sourcing websites, indicating that over 2 million service providers have registered in these 10 websites and over 700 million dollars have paid in last 10 years. According to Evalueserve, another market research company, the market size of online sourcing will increase to 20 billion US dollars by 2015(Mitra, 2010). Although individuals, small business owners and entrepreneurs are currently the major users of online sourcing, we have seen its potentials to be exploited by big organizations. Indeed, some big corporations like Google, AOL, Philip Morris (Altria Group, Inc.), GEICO, ESPN, VeriSign, and

Polo has begun adopting online sourcing[1]. Particularly, open innovation, one form of online sourcing, has been widely adopted by big companies like Microsoft and IBM (Ebner et al., 2009). Therefore, we view the emergence of online sourcing as a paradigm shift that will fundamentally shape our economy as what T. Malone observed over 10 years ago (Malone, 1998).

Although online sourcing has been argued as "the biggest paradigm shift in innovation since the Industrial Revolution,"[2] the phenomenon is still under-explored by academics. Therefore, academics should respond and begin investigating this phenomenon with a comprehensive manner. So far, only a few studies on online sourcing can be found in the literature (e.g. Gefen & Carmel, 2008; Obal 2009). Although these studies do help us gain some insights regarding this new phenomenon, none of them treated online sourcing as a separate and revolutionary phenomenon and conducted a comprehensive investigation. For instance, in the study on "online programming marketplace" by Gefen and Carmel (2008), online sourcing was treated as a special case of traditional outsourcing, being used to test the traditional outsourcing theories, e.g., transaction cost theory and agency theory. Obal (2009), drawing on Structuration Theory, viewed online sourcing as "the dynamic interaction of the individual and opportunity" and paid attention to the individual level users of online sourcing, especially the entrepreneurs. Obviously, another side of online sourcing was neglected in his study, that is, the potentials of online sourcing used by formal businesses, even by the large ones. Another problem of current research on online sourcing is that traditional outsourcing theoretical perspectives borrowed from outsourcing literature may not be proper for online sourcing research because of their focus on

[1] Information was accessed from the website of TopCoder: http://www.topcoder.com/tc?module=Static&d1=pressroom&d2=pr_112906, last access on 1/11/2011

[2] Wendy Kaufman, *Crowdsourcing Turns Business On Its Head*, (NPR radio broadcast Aug. 20, 2008), *available at* http://www.npr.org/templates/story/story.php?storyId=93495217.

corporate strategic initiative, very expensive project, and long-term relationship between clients and providers. Therefore, a new research agenda that views online sourcing as the "paradigm shift" in the current economy should be established.

In this study, we believe online sourcing will have the revolutionary effects on organizations, and thus, gaining a deep understanding on the online sourcing decision makings from the business users' perspective become particularly important for the current moment. The purpose of this paper is to understand the adoption of online sourcing by business users. To accomplish this, a new research framework that draws upon prior research will be adapted to a new context - online sourcing - in this study. By doing this, we not only indicate how different theories are aligned within an integrative framework, but also extend outsourcing research to a new context – online sourcing.

Table 1-1: Statistics of Online Sourcing (Adapted from Frei, 2009)

Online Service Vendors	Registered Providers	Gross Payments
Elance	97,500	$210,000,000
LiveOps	40,000	$150,000,000
Rent A Coder	266,754	$140,000,000
Guru	1,000,000	$100,000,000
oDesk	331,000	$90,000,000
Amazon Mechanical Turk	200,000	-
GetAFreelancer	-	$41,000,000
TopCoder	217,145	$7,000,000
99designs	45,000	$6,531,977
Innocentive	180,000	$4,420,000
Totals	**2,377,399**	$**748,951,977**

The rest of the dissertation is organized as follows. We begin by positioning online sourcing into the stream of IS outsourcing via a historical analysis of IS outsourcing, followed by the classification of the practices of outsourcing. We then propose the research question of this

study, followed by the theoretical development. We then adapted and applied an integrative theoretical framework of outsourcing to online sourcing based on previous outsourcing frameworks. Next, the research model and the hypotheses are presented within the proposed framework. The research methodology is then discussed. Subsequently, the paper presents the research results, followed by the discussions of the finding of this study and their implications to theory and practice. Next, the paper indicates the limitations of this study and some future research directions. Finally, a short research conclusion is presented.

1.2 IS Outsourcing: History, Trends, and Definitions

Looking back at the history of IS outsourcing, we noticed several distinct trends and some important implications of these trends for organizations. We classify these trends into what we call “three waves of outsourcing”.

Initially, IS outsourcing consisted an external vendor providing a single basic function to the customer, generally considered as a way to supplement a company’s IS function (e.g., the use of contract programmer, the management of the data processing facilities and the purchasing of packaged software) (Dibbern et al., 2004). In 1963, Electronic Data Systems (EDS) signed an agreement with Blue Cross of Pennsylvania for the handling of its entire data processing services. This was the first time a large business had turned over its entire data processing department to a third party, indicating that IS outsourcing had evolved into a new phase. After that, EDS’s client base grew to include such noteworthy customers as Frito-Lay and General Motors during 1970s and Continental Airlines, First City Bank and Enron during the mid-1980s (Dibbern et al., 2004). But it was not until 1989 when IBM signed the $1 billion outsourcing mega-deal with Kodak, did the world begin to take notice of outsourcing. The influence of this deal was so tremendous that it led some to term this as the “Kodak effect” (Loh & Venkatraman, 1992). This deal not

only signaled the arrival of the IS outsourcing mega-deal, but also legitimized outsourcing as a viable organizational strategy for handling IS functions, which was generally considered "as the strategic asset and hence cannot be turned over to a third party" before. Other well-known companies quickly followed suit, including General Dynamics, Delta Airlines, Continental Bank, Xerox, McDonnell Douglas, Chevron, Dupont, JP Morgan, and Bell South (Dibbern et al., 2004). And this trend began to diffuse to other countries and districts and made outsourcing a truly global phenomenon, for instance, "deals by Lufthansa and Deutsche Bank in Germany; Inland Revenue, Rolls Royce, BP and British Aerospace in Britain; KF Group in Sweden; Canada Post in Canada; the South Australia government, Telestra, LendLease, and the Commonwealth Bank of Australia in Australia; Swiss Bank in Switzerland; and Bank di' Roma in Italy" (Dibbern et al., 2004). Once it was shown that IT could effectively be outsourced, it didn't take long for other knowledge-based business functions such as accounting and HR to follow with the concomitant growth of new outsourcing vendors beyond the traditional IT outsourcing vendors. This was the era of the Business Process Outsourcing (BPO). We term this as the First Wave of Outsourcing. Its definition is given in Table 1-2. With the evolvement, there have been a few variants of outsourcing practices emerging out during this era, as the follows:

- Insourcing, the practice of evaluating the outsourcing option, but confirming the continued use of internal IT resources to achieve the same objectives of outsourcing (Hirschheim and Lacity, 2000).
- Cosourcing, the practice of that the vendor and client collaborate so closely that the vendor can replace or augment the client's IT competencies. Project teams are mixed. And leadership can come from either one. Effectively, both organizations' resources

become part of a single team aimed at accomplishing the client's needs (Kaiser & Hawk 2004).

- And multisourcing, the practice of seamlessly blending internally and externally delivered services from the optimal set of internal and external providers not just to cut costs or gain efficiencies, but to maximize growth, agility, and bottom-line results (Cohen & Young, 2005)

By 1990s, companies started looking more and more to overseas vendors for the provision of IT services to exploit the cheap labor cost of the oversea countries. This trend was amplified by airlines and computer service companies during 1990s through offshore sourcing of back-office services to the companies in India. For instances, American Express has been offshoring a variety of back-office processing tasks to India since 1994; and GE Capital opened its GE Capital International Services (GECIS) in India in 1997 (Davis et al., 2006). Then by the late 1990s, much of this impetus came from the Y2K phenomenon where Western companies, faced with a lack of professionals to complete the Y2K remediation work, looked to foreign shores for professionals capable of doing this work. Many foreign software organizations, which were biding their time to get into foreign and more lucrative markets, saw this as their opportunity to get the proverbial "foot in the door." This direct effect of offshoring to India is the dramatic growth of India vendors such as TCS (Tata Consulting Services), Infosys, Satyam, and Wipro. Now the offshoring services have expanded from IT services to business process outsourcing and to other IT-enabled services. According to Agarwal and Paney (2004) 380,000 IT professionals were employed offshore in 2004.In particular, new offshore service destination countries continue to appear. Although India and Canada are currently the two biggest offshoring destination countries, emerging markets such as the Philippines, Mexico, China, South Africa,

Ireland, Russia, Philippines, Brazil, Eastern Europe, and Malaysia have made significant headway during the past few years (Davis et al., 2006). This has made offshoring a truly global phenomenon. Here we term this as the Second Wave of Outsourcing. More recently a noticeable pattern in offshoring has been observed: Western European countries send their outsourced work to Eastern Europe, whereas the U.S. sends much of its work to Mexico and Canada (Davis et al., 2006).This has given rise to the term "nearshoring", as one variant of offshoring. Obviously, the emergence of nearshoring is that it can overcome the complexity of offshoring with the proximity of geography, time, culture, language, economic and politics between two nearby countries. Another emerging trend is the rise of "rural outsourcing" or "farmshoring" recently in U.S.: a growing number of organizations are shifting away from overseas outsourcing and tapping lower costs closer to home, by hiring outsourcing providers with operations in rural areas of the U.S. (Violino, 2010). According to Mary Lacity, a professor of information systems at the University of Missouri-St. Louis, who has been conducting extensive research on the market, there has been huge demand for the nearshoring services. And she estimates that there are about 20 rural outsourcing providers in the U.S. and, based on her analysis of the providers, the total market size is about $100 million (Violino, 2011).

The practices of online outsourcing started from the late 1990s. As indicated in Figure A-1 and Table A-1 in the Appendix A, we can see that online sourcing has gone through three periods: (1) 1998-2000, the inception stage; (2) 2001-2006, the growth stage; and (3) 2007 - , the booming stage. During the inception stage, several online sourcing vendors were founded to explore the market opportunities as the intermediary (marketplace) between service providers and service clients. Some of them survived the dot-com bubble of the late 1990s and has grown to be the market leader of current online sourcing industry, such as, Guru.com, Elance, and

vWorker. For instance, vWorker was founded in 1998, formerly known as RentACoder –an online programming marketplace (Gefen and Carmel, 2008). In 2010, RentACoder changed its name to vWorker to accommodate more broad services other than IT services. Now vWorker has attracted over 150,000 employers and over 319,000 virtual workers from a wide variety of countries and districts. After 2001, a few more competitors began to enter into the online sourcing market. To differentiate themselves with the market leaders, these firms began exploring different niche markets by identifying different customer needs, and thereby, a few more business variants (models) emerged out during this stage. For instance, AMT targeted on the crowd of working forces, founded on 2001; TopCoder was built as the community of both clients and providers instead of the marketplace model, founded on 2001; and InnoCentive was also founded on 2001, specialized as the online innovative problems solving platform. After 2006, online sourcing entered into a quick development stage. The number of the firms established in this stage far outstrips that of the firms founded in the prior stages.

Unlike previous outsourcing trends, as closed inter-organizational boundary practices subject to the long-term legal contract, these new online outsourcing practices take place in an open and virtual context, characterized with small and short-term deals (Gefen & Carmel, 2008). This is the era of online sourcing. Therefore, we term this the third wave of outsourcing.

Just like the other two prior waves of outsourcing, a few more practice variants (models) can also be observed during the era of online sourcing:

- Application Service Provider (ASP), the practice of renting or "paying as you use" access to centrally managed business applications, made available to multiple users from a shared facility over the Internet or other networks via browser-enabled devices (Kern et al., 2002). Strictly speaking, ASP is special case of traditional outsourcing that uses the

Internet as the service delivery platform. The application providers in ASP model are similar to the service providers in traditional outsourcing model, but only offer application services with the "on-demand" mode. However, considering it as one of the online outsourcing practices, we put it in the category of online sourcing.

- Open sourcing, the use of the open source software (OSS) development model as a global sourcing strategy for an organization's software development process (Ågerfalk & Fitzgerald, 2008). Open sourcing service originated from the OSS movement which began in the late 1970s. More recently, the concept of open sourcing has evolved to a viable and reliable way of sourcing of services from "a global but largely unknown workforce" in commercial settings. Open sourcing service is indeed a community-based business model in which the fulfillment of services relies on the collective actions of the whole community members (Markus, 2007). Firms can acquire open sourcing services by leading an OSS community (Ågerfalk & Fitzgerald, 2008), participating in an OSS community, or joining an open sourcing service network (Feller, 2008).
- Crowdsourcing, the practice of turning over the large volume of time-consuming tasks to the workforce of the crowd at very low cost via an online crowdsourcing marketplace (Lu & Zeng, 2011). The crowdsourcing service model is usually appropriate for the so called "cognitive piecework" type of services. Generally, this type of tasks requires low to moderate skills and can be performed in a comparatively short period of time. Examples of cognitive piecework type of service include locating a website, tagging photos according to their contents, rewriting sections of prose, choosing representative screenshots from a short video clip, or responding to survey questions. Because the entry level is relatively low, almost anyone can become a member of the crowd and get paid on

his/her own schedule. Amazon's Mechanical Turk platform ("AMT") and iStockphoto exemplify the business model of crowdsourcing service.

- Online sourcing marketplace (OSM), the provision of IT services and other services over an online marketplace (Lu & Zeng, 2011; Gefen & Carmel, 2008). . An OSM is online marketplace that aggregates the firms (service clients) and the large pool of service providers from anywhere of the world. The difference of an OSM and a crowdsourcing marketplace is that the former focuses on knowledge-based type of work while the latter is microtask-based. Firms post their projects on an OSM to attract providers for bidding. Then firms choose one provider from the bidders. The amounts of the projects generally range from a few hundreds US dollars to a few thousands US dollars. Most of the clients come from developed countries like USA, UK, and Canada; and most the providers come from the countries that have labor cost advantage like India, Romania, Indonesia and Russia. Examples of OSM vendors are vWorker, E-lance, Guru.com, and Odesk. OSM vendors, as the third party, offer the necessary marketplace mechanisms and governance structures for the safeguarding service exchanges between clients and providers. These marketplace mechanisms include payment escrow service, conflict resolution service, comment and feedback systems, and rating systems.
- Online sourcing community (OSC), the provision of IT services and other services over an online sourcing community (Lu & Zeng, 2011). Similar to OSM, the OSC model also has a platform vendor as the third party, providing the necessary social mechanisms and governance structures for the safeguarding service exchanges between the community and firms. Unlike OSM where service exchanges generally take place between individual clients and individual providers, the service projects are often fulfilled by collective

actions of the community members. In this sense, the OSC model is more alike the open sourcing service model. The best examples of the OSC model would be TopCoder and Crowdspring. Generally, the OSC model focuses on a specific industry, such as, software development and creative design; while the OSM model is more suited for broad services.

- Open innovation, the provision of the R&D or innovation problems oven an online open innovation platform (Chesbrough, 2003; Ebner, 2009). Open innovation is proposed in against with the concept of closed innovation, in which the R&D departments are assumed to be the main drivers of innovations. In the open innovation paradigm, the boundaries between firms and the environment have become more permeable because of the advancement of the IT technology, and thereby, firms can and should use the external ideas as well as the internal ideas (Chesbrough, 2003). Customers, researchers, students, hobbyists, and even almost anyone can become the resources of the innovative ideas and solutions. In open innovation platforms, clients are often called as problem seekers and the providers as problem solvers. Unlike the OSM model, in which the selection of providers is via the bidding process, open innovation often runs the contests for best solutions among problem solvers. At the end of the contest, one or a few awards will be given out based on the evaluation results. Therefore, the open innovation model falls between the online sourcing marketplace model and the open sourcing model.

We have classified the history of outsourcing into three phases, and discussed different variants of outsourcing and their definitions in each phase, presented in Table 1-2. The trends and variants of outsourcing in each phase shares some characteristics, which are also summarized in Table 1-2. From Table 1-2, we can observe some trends in the history of outsourcing from the first wave to the third wave: (1) the boundary practice of outsourcing has

evolved from the closed inter-organizational boundary to the open and virtual online boundary; (2) outsourcing has evolved from the local phenomenon to the global phenomenon; (3) the client-provider relationship has evolved from the physical and face to face interactions to the virtual relationship mediated by the third party; and (4) the outsourcing contracts have evolved from the long-term mega-deals to the short term, small and more manageable deals. Next, we will turn to the discussion of the research question.

Table 1-2: Summary of Outsourcing Terms and Definitions

Outsourcing Eras	Variants/Terms	Definitions	Shared Characteristics
The 1st wave: outsourcing (1960 -)	Outsourcing	The handing over of assets, resources, activities and/or people to third party management to achieve agreed performance outcomes. (Lacity & Willcocks, 2006)	Closed inter-organizational relationship; domestic; closed organizational boundary; mega-deals; proximity in culture and language; long-term relationship
	Insourcing	The practice of evaluating the outsourcing option, but confirming the continued use of internal IT resources to achieve the same objectives of outsourcing (Hirschheim & Lacity, 2000).	
	Cosourcing	The practice of that the vendor and client collaborate so closely that the vendor can replace or augment the client's IT competencies. (Kaiser & Hawk 2004).	
	Multisourcing	The practice of seamlessly blending internally and externally delivered services from the optimal set of internal and external providers (Cohen & Young, 2005).	
The 2nd wave: offshoring (1990 -)	Offshoring	The provision of organizational products and services from locations in other countries (Davis et al., 2006)	Closed inter-organizational relationship; mega-deals; long-term relationship; disparity in culture and language; global
	Nearshoring	Nearshoring is one type of offshoring and refers to the outsourcing of business or IT processes to providers in nearby countries (Deutsche Bank Research, 2006).	
	Rural outsourcing	The practice of outsourcing by utilizing the outsourcing providers with operations in rural areas of the U.S. (Violino, 2010).	
The 3rd wave: online sourcing (2000 -)	ASP	The practice of providing the "pay as you see" IT services to customers over the Internet or other networks (Kern et al., 2002)	Open boundary; virtual context; online platform; global working forces; micro-deals; short-term relationship
	Open Sourcing	The use of the OSS development model as a global sourcing strategy for an organization's software development process (Ågerfalk & Fitzgerald, 2008)	

Table 1-3 continued

	Crowdsourcing	The practice of turning over the large volume of time-consuming tasks to the workforce of the crowd at very low cost via an online crowdsourcing marketplace (Lu & Zeng, 2011)	
	OSM	The provision of IT services and other services over an online sourcing marketplace (Lu & Zeng, 2011; Gefen & Carmel, 2008)	
	OSC	The provision of IT services and other services over an online sourcing community (Lu & Zeng, 2011)	
	Open Innovation	The provision of R&D or innovation problems oven an online open innovation platform (Chesbrough, 2003; Ebner, 2009)	

CHAPTER 2. RESEARCH QUESTION

We view online sourcing as one of the major "paradigm shifts" in current economy, having revolutionary effects on organizations. However, there are very a few studies on this new phenomenon in literature. Nor do we know much on how organizations understand this new phenomenon and how they make decision to adopt the new way of sourcing of services from an online platform. Thus, gaining a deep understanding on the online sourcing decision makings from the business users' perspective becomes particularly important for the current moment. For academics, firstly, it can help to build up the cumulative knowledge of outsourcing literature by extending outsourcing research to a new online context. Secondly, almost all the extant studies have tried to study outsourcing from the perspective of big business organizations. Since most of current service clients of online sourcing are SMBs and entrepreneurs, this study provides a good opportunity to study outsourcing from a fresh perspective of SMBs and entrepreneurs, whom has been under-explored in outsourcing literature. For practitioners, it will not only help the business clients to make decisions on outsourcing choices when facing with complex outsourcing landscape (Schwarz et al. 2009), but also help the service platform providers to make effective platform designs and appropriate modifications to fit the needs of the business service clients.

Thus, the purpose of this paper is to understand the online sourcing decisions by organizations, that is, we try to answer the following research question:

> What are the key decision attributes based on theories under online sourcing context and how do they collectively influence the business clients' decision makings on online sourcing adoptions?

To answer this research question, a new comprehensive theoretical framework, which bridges traditional theoretical perspectives in prior outsourcing literature and the new contextual

factors of online sourcing, will be proposed later in this paper. We mainly rely on two bodies of literature to draw out the new theoretical framework: (1) traditional theoretical frameworks of outsourcing research(Schwarz et al. 2009; Jayatilaka et al. 2003; Cheon 1995); and (2) online marketplace research literature (Pavlou & Gefen 2004; Pavlou et al. 2007; McKnight et al. 2002a,b; McKnight et al. 2004).

Thus, in this study, we try to make several potential theoretical contributions to the existing outsourcing literature as follows:

1. Based on previous outsourcing literature, an integrative research framework will be developed for the examination of this relative new online sourcing phenomenon. This framework will help to fix the problems of recent online sourcing literature (Gefen & Carmel 2008; Obal 2009) mentioned above, providing a foundation to guide future online sourcing research and helping to establish cumulative knowledge over this new phenomenon.
2. We expand the body of knowledge regarding outsourcing adoption research by looking into the new form of outsourcing - online sourcing, which can help to gain deep understanding on the complex outsourcing landscape faced by both academics and practitioners (Schwarz et al. 2009).
3. Factors due to new features of online sourcing will be integrated into the proposed research framework, which not only helps to understand this new phenomenon, but also enrich the body of outsourcing literature.
4. Unlike previous outsourcing research, most of which look at this phenomenon from the perspective of big business organizations, this study will shed new light on outsourcing study from a fresh perspective of SMBs and entrepreneurs.

We have proposed the research question. Next we turn to the literature review and theoretical development of this study.

CHAPTER 3. LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

3.1 Outsourcing Decision Theoretical Frameworks

Outsourcing decision making has been studied from many different theoretical lenses, including transaction cost theory, agency theory, social exchange theory, resource-based view, and others (Refer Dibbern et al., 2004 for detailed review). Most of these studies are based on one theoretical perspective to understand outsourcing decision and practice. For example, Ang and Straub (1998) examined the roles of transaction cost and production cost in the outsourcing decision in bank industry from the transaction cost theory perspective; and Zack and Singh (2010) proposed a framework based on knowledge-based view to evaluate outsourcing decision. While these single theoretical perspectives do improve our understandings on outsourcing, they also restricted the vision within one angle and result the discrepancies among the explanations based on the different theoretical frameworks. For example, Watjatrakul (2005) found that TCT and RBV suggest different sourcing alternatives: asset specificity attribute based on TCT overpowers the strategic resource attribute based on RBV. More recently, Zack and Singh (2010) argued that outsourcing decision that might seem appropriate for outsourcing from the perspectives of transaction cost economics or the resource-based view of the firm might not be from the knowledge-based view of firm.

This inconsistency not only impedes the knowledge accumulations for outsourcing research, but also confuses executives when making outsourcing decisions in practice. Therefore, several researchers have suggested an integrative framework for outsourcing study based on multiple theoretical lenses (e.g. Cheon et al., 1995; Jayatilaka et al., 2003; Schwarz et al. 2009). An integrative perspective will provide us a few benefits for outsourcing study. First, when making outsourcing decisions, executives have to assess a long list of attributes that influence the

decisions (Dibbern et al., 2004). An integrative perspective will not only provide a comprehensive list of outsourcing attributes, but also offer the real understandings of how executives makes outsourcing decisions (Schwarz et al., 2009). Second, based on contingency theory, an integrative framework can provide guidance in examining the various aspects of the outsourcing phenomenon in a consistent and cumulative manner (Cheon et al., 1995). Third, as Cheon et al. (1995) and Jayatilaka et al. (2003) have suggested, different theories do not conflict with each other and various theoretical concepts are inherently interrelated to each other, thus, an integrative perspective provide the opportunity to examine the relationships among the different theoretical concepts. Fourth, an integrative perspective will help to establish a cumulative tradition for outsourcing research (Cheon et al., 1995). Fifth and finally, online sourcing is a relatively new research phenomenon and we do not know which theory is more relevant for this phenomenon, therefore, employing multiple theoretical lenses will offer the opportunity to identify the theories that are more relevant for the research phenomenon. Thus, it's necessary and reasonable to apply an integrative framework to online sourcing in this study.

3.2 The Triangular Alignment Model

In this study, we follow the tradition of the integrative perspective of outsourcing research (Cheon et al., 1995; Jayatilaka et al., 2003; Schwarz et al. 2009) and apply an integrative framework to a new outsourcing context – online sourcing.

We choose the triangular alignment framework of outsourcing decisions proposed by Schwarz et al. (2009) as the basic framework to look into the phenomenon of online sourcing. The triangular alignment framework of outsourcing decisions developed by Schwarz et al. (2009), depicted in Figure 3-1, build upon the previous theoretical frameworks in outsourcing literature (Cheon et al., 1995; Jayatilaka et al., 2003) and the triangular alignment model in

organizational strategy research (Madhok, 2002). It examines outsourcing decisions from both the economic perspective and strategic perspective, bridging the big four theoretical views of organization: transaction cost theory (TCT), resourced-based theory (RBT), resource dependence theory (RDT), and knowledge-based view (KBV). These four theoretical lenses are aligned together to shed a light on outsourcing decisions along three dimensions, and they are, respectively, the resource dimension, the transaction dimension, and the knowledge dimension. The transaction dimension reflects the economic determinants in outsourcing decision. The resource dimension is broadened to include both resourced-based theory attributes and resource dependence theory attributes. And the knowledge dimension refers to the knowledge-based attributes for outsourcing decision.

Using the triangular alignment model, Schwarz et al. (2009) examined outsourcing decisions for three outsourcing alternatives: ASP, domestic outsourcing and offshoring. We argue that this triangular alignment model is also relevant for online sourcing context, and the reasons are given as follows:

1. The model includes a broad theoretical attributes relevant to outsourcing decision from both economic and strategic perspectives;
2. The four theoretical perspectives reflected in their model are also relevant for the online outsourcing context;
3. ASP, one of the three outsourcing alternatives that they have examined, is similar to online sourcing context. Both ASP and online sourcing use Internet as the major communication and technology infrastructure, and the media for the delivery of the services.

Like prior outsourcing literature (e.g. Jayatilaka et al., 2003 and Schwarz et al., 2009), this study also seeks to apply the IS community's understanding of outsourcing decision to the new domain of outsourcing (online sourcing) by adapting the previous theoretical frameworks.

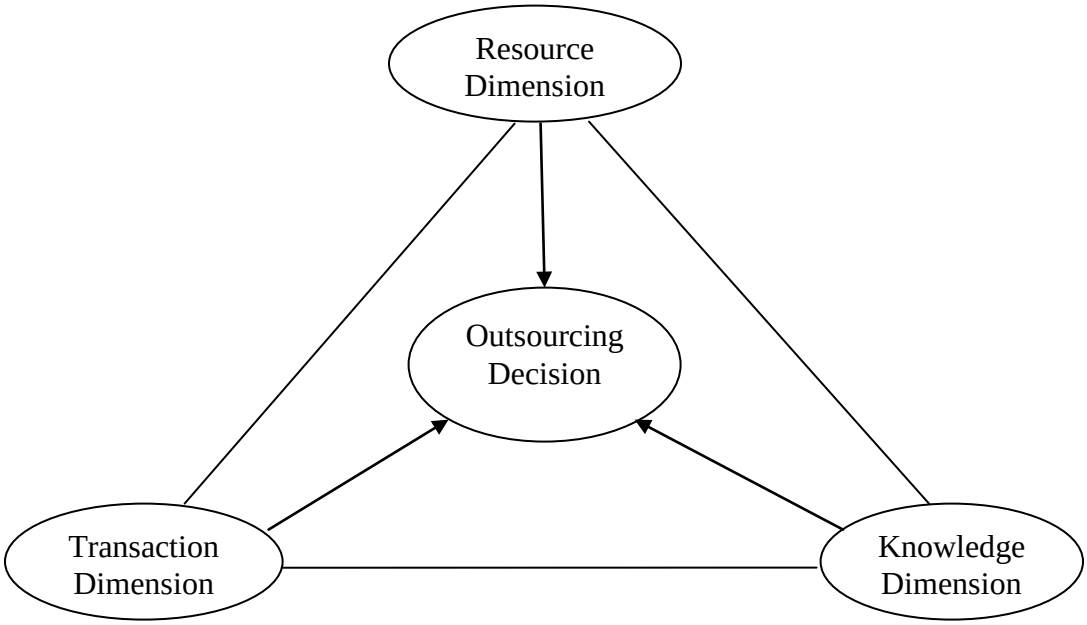


Figure 3-1: The Triangular Alignment Model

3.3 The Integrative Frameworks for Online Sourcing

In this section, we will adapt the triangular alignment model discussed above to the context of online sourcing by including the new factors that are relevant to the online sourcing context. To accomplish this, we need to identify the key differences between online sourcing and the traditional outsourcing (outsourcing and offshoring) first. In Table 3-1, we lists the key characteristics of three business models of online sourcing together with traditional outsourcing in terms of the dimensions of task types, outsourcing relationships, governance and etc. From Table 3-1, some shared characteristics among these three business models of online sourcing – crowdsourcing, OSM and OSC – can be observed, including outsourcing relationship, outsourcing context, outsourcing governance and institutional mechanism. These shared characteristics indicate the key differences between online sourcing and the traditional outsourcing. And they are described below.

While traditional outsourcing (outsourcing and offshoring) focuses on a dyadic client-supplier relationship, online sourcing models often follow a triadic structure, consisting of online sourcing vendors, firms (also often referred as “service clients” or “employers” depending on context), and service providers. Online sourcing vendors develop an online “platform” on which firms can broadcast and outsource their projects, and service providers can bid for, accept and perform the work. Similar to other kinds of e-business models (e.g., eBay), online sourcing vendors must also set up the participation agreements, conduct of code, and other online transactional mechanisms and rules that constitute the necessary condition for online transactions and activities. Firms and providers must assent to follow the mechanisms and rules to participate the platform. These agreements and institutional mechanism, in combining with the client-provider contract, govern the outsourcing activities occurred on an online platform. Thus, online

sourcing vendors have afforded part of the outsourcing governance role that belongs to the client firms in traditional outsourcing context.

Therefore, the primary difference between online sourcing and traditional outsourcing is that the former is governed by the triadic structure and the latter follows a dyadic relationship. That is to say, online sourcing platforms, providing necessary transaction conditions and institutional rules, play a very vital role in governing online sourcing activities. The triangular alignment model evolved from organizational research, mainly focuses on organizational perspectives, and thus, cannot cover the governance structure and the role of platform played in online sourcing. Thus, the new research framework should take account of the triadic structure and the governance role that the platforms perform in online sourcing activities. Drawing upon prior outsourcing literature (Goo et al., 2009; Lee & Kim, 1999) and online marketplace literature (Pavlou & Gefen, 2004), we propose one more theoretical dimension based on social exchange theory (SET) (Blau, 1964) – relation – to the triangular alignment model of outsourcing decisions (Schwarz et al, 2009) discussed above. Online marketplace literature (e.g., Pavlou & Gefen, 2004) and outsourcing governance literature (Goo et al., 2009; Lee & Kim, 1999) indicate that trust is the most important element based upon social exchange theory (SET) (Blau, 1964). Therefore, for model simplification, we propose trust as the most important relational element for online sourcing (Goo et al., 2009; Pavlou & Gefen, 2004). Fianlly, we adapted the triangular model of Schwarz et al. (2009) to a new research framework for online sourcing, depicted in Figure 3-2.

Next we will turn to discuss each set of attributes by referring to their reference theories, followed by a discussion of the new factors that are relevant to online sourcing context. Then a new outsourcing decision model will be proposed and examined in the context of online sourcing.

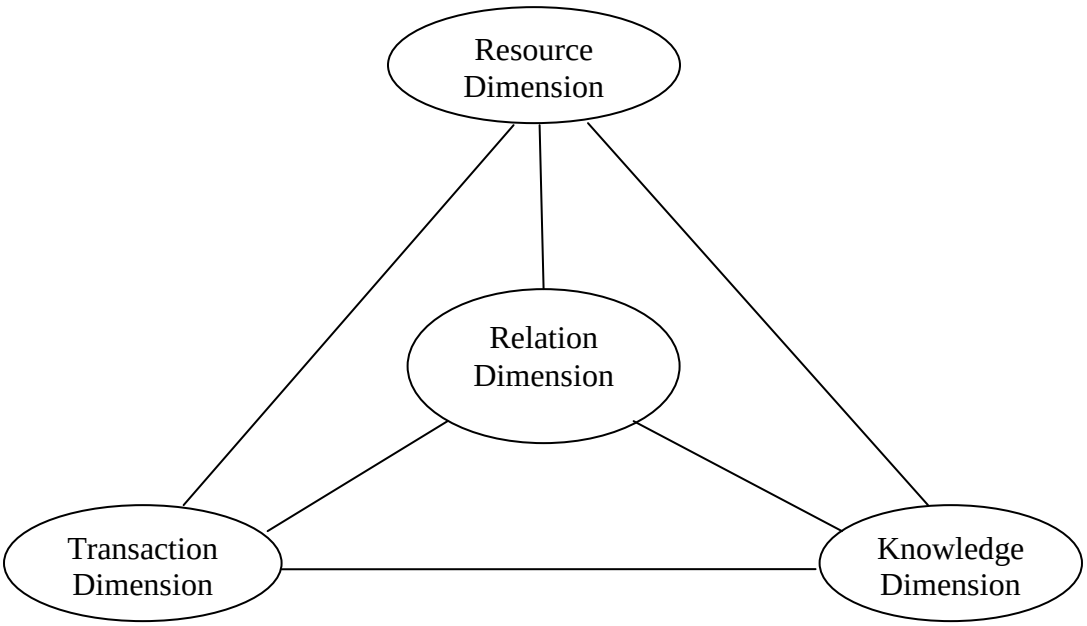


Figure 3-2: The Integrative Four-Dimensional Framework of Online Sourcing

Table 3-1: Comparison of Online Sourcing with Traditional Outsourcing

Table 3-1: Comparison of Online Sourcing with Traditional Outsourcing				
Model	**Online Sourcing**			**Traditional Outsourcing**
	Crowdsourcing	**OSM**	**OSC**	
Service Scope	Narrow	Broad	Narrow	Broad
Pricing Policy	Fixed price	Reverse bid or fixed price	Online Contest	Negotiation
Task Type	Small piece of work	Knowledge-based project	Knowledge-based project or Innovative problem	Very large and complex project
Service Clients	Many types: Individuals, SMEs, entrepreneurs, big companies			Big companies
Providers	Crowd of individuals	Individuals or small companies		Big companies
Relationship	Triadic: firms, vendors, and providers			Dyadic: firms and providers
context	Virtual, open, and online			closed inter-organizational
Governance	Marketplace or community governance model with the third party involved in			Hierarchical, and often needs to consider governance model of client company.
Institutional Mechanism	• Comments and feedbacks • Status report • Online monitoring • Arbitration Service • Legal contract			Legal contract; Regular meeting

3.4 Outsourcing Decision Attributes Based on Theories

3.4.1 Transaction Dimension

Transaction Cost Theory (TCT) (Coase, 1937; Williamson, 1975, 1981, 1985) has been developed as a predominant theoretical explanation of the boundary choice (Poppo & Zenger, 1998) of a firm over different alternative governance structures, e.g., market, hierarchy or network. The basic unit of analysis in TCT is a transaction, which "occurs when a good or service is transferred across a technologically separate interface" (Williamson, 1985, p.1). The

transaction cost theory of the firms argues that decisions about organizational activities are made by balancing the production cost (the cost of labor, capital and materials necessary to produce the goods or services) and the transaction cost (the cost of monitoring, controlling, and managing transactions) (Jayatilaka et al., 2003).

TCT is the mostly used theoretical analytical framework in outsourcing literature (e.g. Ang & Straub et al., 1998; Ang & Cummings 1997; Lacity & Hirschheim, 1993; Lacity & Willcocks 1995; Lacity et al., 1996; Aubert et al., 1996, 2003). Applied to the IT outsourcing context, TCT perspective suggests outsourcing will reduce production costs due to the economies of scale of a service provider and tends to increase transaction costs due to the opportunities behavior in market (Schwarz et al., 2009). Thus, the economic rationale behind an IT outsourcing decision based on TCT is to weigh between the production costs and the transaction costs associated with IT services (Ang & Straub, 1998). According to Williamson (1985), the transaction cost is determined by three transaction attributes: (1) frequency of use; (2) asset specificity; and (3) degree of uncertainty. Thus, the extent of outsourcing decided by a firm is determined by the three transaction attributes, as depicted in Figure 3-3.

Frequency of use refers to the number of times that a service or good is used. It could be occasional or recurrent. Generally, more frequency of a service leads to in-house production. Asset specificity refers to "the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value" (Williamson, 1991, p. 281). Asset specificity is measured by the degree of the standardization of assets, and it can be non-specific, idiosyncratic or mixed. In outsourcing context, asset specificity refers to the uniqueness of the overall architecture (hardware and software), specialized technique skills and business skills, IT training and operating procedures (Cheon et al. 1995; Ang & Cummings 1997). Generally

organizations tend to keep the resources with high asset specificity in house for strategic considerations. Uncertainty is associated with broad issues, such as, future business needs, changes in technologies, contractual complexity, unpredictable market, and etc. The high uncertainty often leads organization to keep the resources inside.

Applied this TCT perspective to online sourcing, we can find that most of the transactions or services available from the online sourcing platforms have the characteristics of non-specific assets and occasional use. In another word, the services or resources from the OSMs become "commodities" (Lacity & Willcocks, 1995) that can easily be accessed and purchased. Erran Carmel (2008) in his blog[3] coined this as the commoditization of process of service from e-marketplace. The costs of services in these online marketplaces are pushed to relatively low level because of the "global labor arbitrage" (Gefen & Carmel, 2008), the competition among service providers, and the reverse bidding process for a project. Moreover, the uncertainty associated with contract and market has been mitigated by the institutional mechanisms (Pavlou & Gefen, 2004) provided by the OSP providers, including the escrow service, the arbitration service, and the online feedback and rating systems. Therefore, the existence of the OSP provides a way for firms, especially the entrepreneurs and small businesses, to access the non-specific and occasional use of resources at a relatively low cost. That is, the external resources available from online platforms have a cost comparative advantage against the resources kept in house from the perspective of the service clients. The cost-reduction strategy or the need to cut cost for a firm to use online sourcing becomes evident in the feedbacks of the service clients from the online marketplace websites, such as:

[3] Carmel, Erran, Microsourcing, Is this the eventual global sourcing landscape? http://errancarmel.blogspot.com/2008/07/micro-sourcing.html, last access on 2011-1-15.

- Workers hired through the site cost me about 80% to 90% less than what I would spend locally. – a service client from vWorker.com
- Your site is where we find experts quickly and cost-effectively. – a service client from Elance.com
- I've never received so many good ideas back, even when I was a Creative Director with a large creative team, at a fraction of the cost – a service client from Crowdsrping.com.

In summary, based on the TCT perspective, cost or cost related factors (e.g. cost pressures (Apte, 1990, Ang & Straub, 1998)) should be considered as an important direct factor for a service client to engage the practice of online sourcing. Similar result was also observed in the ASP research of Jayatilaka et al. (2003), where "economic cost" has been indicated as a key determinant of ASP adoption from the TCT perspective. In this study, we follow the research of Ang & Straub (1998) and Jayatilaka et al. (2003) and propose the concept of "*Cost Reduction*" from the TCT perspective to capture the cost related factors or the cost reduction strategy taken by firms. This concept not only reflects the economic perspective of outsourcing decision but also indicates a strategic perspective of a firm (Cheon et al., 1995, Teng et al., 1995) to use online sourcing. Here we define Cost Reduction as the perceived cost advantages of using the external services from the OSPs than the services in house by a firm. We argue that the pressure to reduce cost or the cost reduction strategy taken by firms will shape the perceptions of the executives towards the alternatives of resources, create gaps within firms in terms of both resource and knowledge, and finally drive the decisions towards the sourcing options. Therefore, via the concept of Cost Reduction we can link the TCT perspective with other theoretical perspectives like RBT and KBV, which we will discuss in detail later in the section of research model.

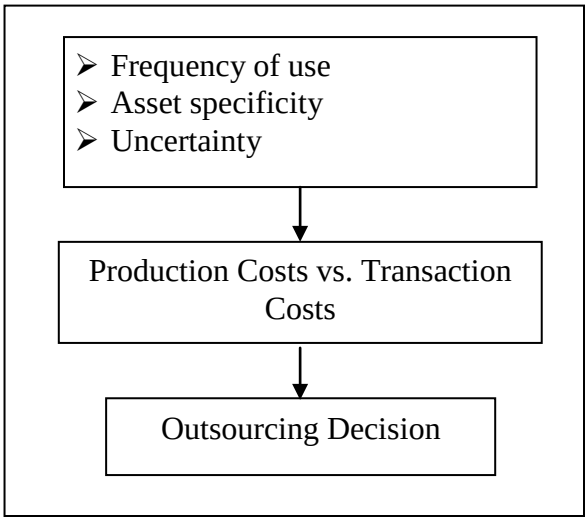


Figure 3-3: The TCT Perspective of Outsourcing

3.4.2 Resource Dimension

The resource-related attributes relevant to outsourcing decisions are based on two theoretical views of firm: Resource-Based Thery (RBT) and Resource Dependence Theory (RDT) (Schwarz et al., 2009). The resource-based theory views a firm as a collection of resources and capabilities. To gain competitive advantages a firm must acquire and deploy the resources and capabilities that are rare, valuable, and non-substitutable (Penrose, 1959; Barney, 1991). While the resource-based theory provides an internal strategic analysis of a firm in terms of resources and capabilities, the resource-dependence theory turns the focus to external environment and argues that firm must be able to quickly secure critical resources from the external environment to maintain their competitive postures and adapt the change of environment (Pfeffer & Salancik, 1978; Aldrich, 1976; Aldrich & Pfeffer, 1976). Next we will turn to the discussion of each theory and its application to online sourcing.

3.4.2.1 Resource-Based Theory and Online Sourcing

RBT views the firm as a collection of resources. These resources can be classified into three categories: physical resources, human resources, and financial resources (Barney, 1991). The competitive advantage of a firm depends on its ability to gain and defend the resources that are rare, valuable, immobile and non-substitutable (Barney, 1991; Grant, 1991; Rumelt, 1974). Applied to outsourcing context, the RBT perspective offers a strategic analysis framework of outsourcing around three key concepts: resources and capabilities, competitive advantage and sustained competitive advantage (Jayatilaka et al. 2003). To gain and sustain competitive advantage a firm must acquire and deploy the resources that are rare, valuable, difficult to imitate, and relatively immobile and non-substitutable (Barney, 1991). When a firm finds that its internal resources and capabilities cannot satisfy its strategic objectives, the external acquisition of

complementary resources and capabilities becomes necessary (Grant 1991). This external acquisition is known as filling the gaps between the current internal resources and the resources that are required for the intended strategic objectives (Stevensen 1976). Especially when exposing to the high level of environmental and technological uncertainties, firms are more inclined to keep their core resources in house and acquire the non-strategic resources from the outside to sustain their competitive advantages (Prahalad & Hamel, 1990) and improve their competitive flexibility (Barney, 1991). Therefore, according to the resource-based perspective, when the performance of existing resources falls short of expectation, outsourcing can be a strategic response to fill these gaps (Teng et al., 1995). When a firm realizes that its current IS resources and capabilities do not match up with its future needs, it enters into the arrangements with external vendors in the outsourcing marketplace to resolve the situation (Grover et al., 1994a; Lacity & Hirschheim, 1993a, b). Through outsourcing, a firm not only maintains current stock of resources and capabilities, but also augments the resources to enable the firm to sustain its competitive advantage (Zack & Singh 2010).

According to Schwarz et al. (2009), three theoretical concepts based on RBT spring out for the analysis of outsourcing decision:

- Resource Gap: the extent of the disparity between the current internal resources and capabilities of a firm and the anticipated resources and capabilities that are needed for the intended firm strategy.
- Resource Complementarity: the extent to which the external resources acquired from external outsourcing marketplace are as good complements to the current resources of a firm. Here we use the concept of “resource complementarity” to replace the concept of “resource heterogeneity” in the study of Schwarz et al. (2009). We do this for two

reasons: (1) resource complementarity can better capture the relationship between external online resources and the current internal resources of a firm, and (2) resource complementarity can better reflect the nature of external resources that a firm acquires through outsourcing: the non-core or non-strategic resources.

- Resource Utilization: the extent to which the external resources acquired from outsourcing marketplace can be efficiently and effectively acquired and utilized by a firm.

The analytical framework based on RBT perspective, adapted from Jayatilaka et al. (2003), is depicted in Figure 3-4. The relevance of the RBT perspective to online sourcing is evident. The OSPs aggregate a wide range of resources, capabilities, and skilled providers from all over the world. For example, vWorker.com (formerly RentACoder.com) provides over 300,000 on-tap experts in hundreds of fields; and topcoder.com, an online software development community, has attracted more than 270,000 software professionals. An OSP provide a simple and efficient way for a firm to locate a resource through online marketplace functions and infrastructure, e.g., the profiles of service providers, online bidding system, project management and tracking system, and contract management. According to Gefen and Carmel (2008), a bidding request on RentACoder (current vWorker.com) receives 13 bids from service providers in average. A firm can choose a service provider by considering his/her bidding price, experience, skills, past working relationships, and rating of past work. Therefore, an OSP can be treated as an external pool of resources and capabilities for a firm. A firm can keep its core resources in house and acquire the resources that it needs from the online marketplace via the "pay on demand" mode. The existence of the OSPs are particular helpful for small businesses and entrepreneurs, who often lack of the critical resources for their growth. On the other hand, because there are a wide range of resources and services available from the OSPs, a firm can always quickly locate

and acquire resources from online that it does not have. The evidence of the RBT perspective of online sourcing can also be found in their own words of the service clients, for example:

- The site provides a fantastic way to quickly expand my development team on an ad-hoc basis to meet the peaks in custom software demands from the business. – a service client from vWorker.com
- I have been hiring programmers for over 13 years, and I'm sure you're aware of how time-consuming and difficult it is to find good people with the appropriate skills. Using this site it took only a matter of days to find the appropriate programmers, at prices that were literally 25 times less expensive than we expected. The programmers delivered quality software on time. – another service client from vWorker.com
- By finding a highly communicative pair of hands that was willing to work with me, I was able to get something done that would have otherwise taken me additional time and stress. I was able to focus my efforts elsewhere. – a service client from Guru.com
- We think of this site as an extension of our team. Whenever we need some expertise, say with social media, internet marketing, event production, or website development, we go straight to this site. – a service client from Elance.com

3.4.2.2 Resource-Dependency Theory and Online Sourcing

While the RBT perspective emphasizes the necessity of critical resource and capabilities, the RDT perspective argues that organizational actions are also determined by its external environmental conditions (Aldrich, 1976; Aldrich & Pfeffer, 1976). The RDT perspective acknowledges that a single firm cannot produce or own all the required resources for its operations. Thus, to survive a firm is forced to acquire these resources from other firms or social actors in its environment.

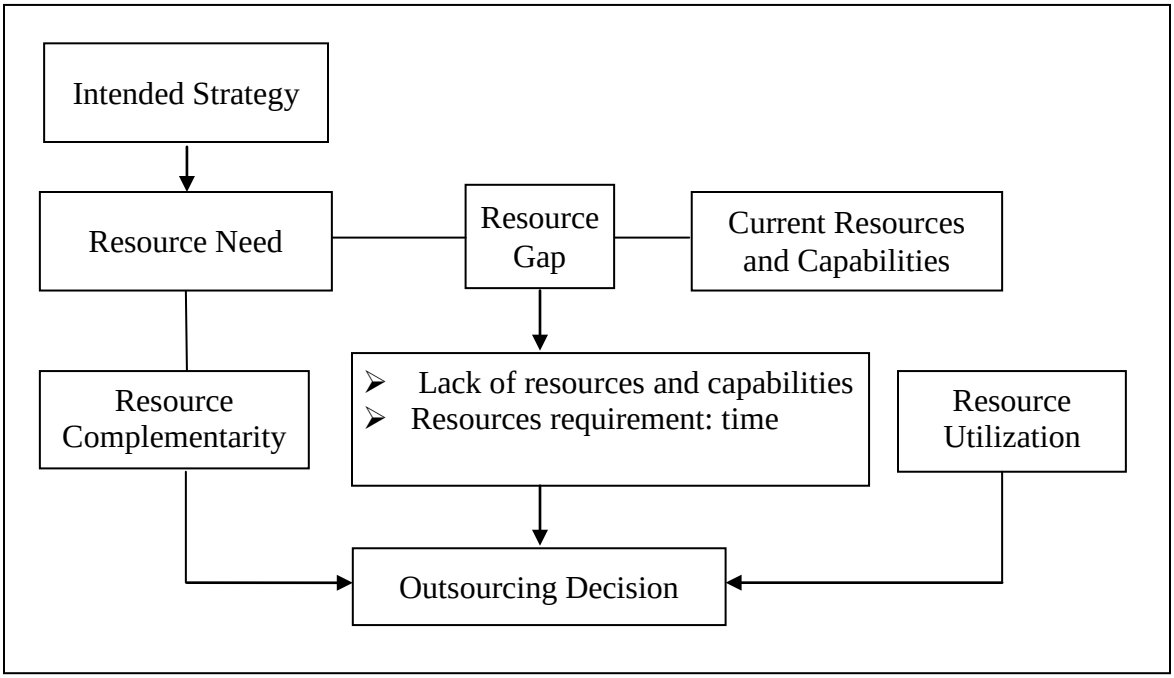


Figure 3-4: The RBT Perspective of Outsourcing

Thus, Resource Dependence Theory (Pfeffer 1981) shed a light on the power relations between a firm and its external environment. The essence of the RDT is that an organization often enters into exchange relationships with other organizations in the environment when it fails to generate necessary resources or capabilities internally (Teng et al., 1995). The limitations on the availability of internal resources foster specialization and necessitate organizational interdependence, and thus create resource dependencies among organizations (Pfeffer & Salancik 1978; Ulrich & Barney 1984). With this perspective, the RDT argues that the objectives of the firm are to maximize their power and minimize the amount of the dependence by taking control over resources (Pfeffer, 1981). Viewed in this light, the survival of an organization depends upon its ability to procure critical resources from the external environment (Schwarz et al., 2009).

Within the context of outsourcing, the RDT suggests the motive of a firm to make an outsourcing arrangement with the outside vender: to obtain or to gain strategic control over the critical resources (Straub et al., 2008). Thus, the RDT perspective helps to explain "an organization's strategic propensity toward securing access to IS and other critical resources from the external environment when gaps in internal capabilities develop" (Teng et al. 1995). Through outsourcing a firm can obtain the scarce human resources and technological resources from the external environment to enhance its long term survivability (Teng et al., 1995). However, outsourcing also increases the degree of the dependence of firm on the external environment, which violates the assumption of "minimizing the dependence" of RDT. Hence, before entering into an exchange relationship with another firm for critical resources (Grover et al., 1994b), a firm must carefully assess both task environment and the resources (Jayatilaka et al., 2003). The RDT perspective of outsourcing is depicted in Figure 3-5.

According to Schwarz et al. (2009), the RDT perspective suggests two theoretical concepts that are relevant to outsourcing context:

- Task environment, referred as the capability of the platform to offer services and resources in a reliable and secure way;
- Resource suitability, referred as the degree of availability of both service providers and the IT infrastructures they relied on for communication and coordination with the service clients during the service process.

The concept of "Task Environment" evolves from the concept of "munificence" in resource-dependency theory (Aldrich, 1979; Pfeffer & Salancik, 1978). In RDT, munificence is defined as the abundance of critical resources needed by firms operating within an environment (Castrogiovanni, 1991; Dess & Beard, 1984; Pfeffer & Salancik, 1978) and reflects the "capacity" of an environment (Aldrich, 1979). Applied to online sourcing context, we use Task Environment to measure the capacity of an OSP in offering resources and capabilities to firms in a reliable and secure way. Resource suitability is about the nature of the resource being provided by the vendor (Schwarz et al., 2009). "Given the need within an outsourced context to coordinate an application service remotely, and the need to communicate with both the application itself and the service provider, we suggest that a key resource is the telecommunications and network infrastructure upon which the vendor relies, which would enable the two firms to coordinate work and/or deliver the application or prohibit this" (Schwarz et al., 2009). In terms of online sourcing context, because service clients and service providers need to coordinate and delivery the services or applications remotely and virtually, resource suitability becomes particular important. Generally service clients will consider the following two questions before they engage an online sourcing relationship with a service provider:

- Will a service provider be available when I need to communicate?
- And are the IT infrastructures reliable for communication and coordination?

The theoretical concepts from RDT perspective of online sourcing can also be observed in the feedbacks of the service clients, such as:

- Communication was of high quality and expedient in answering pertinent project questions. This site's features allowed us to communicate all of the official business that was relevant to the contract. – a service client from Guru.com
- They (service providers) responded promptly, provided fresh insights and suggestions, met deadlines consistently, and went above and beyond the project's requirements, each in their own way. – a service client from Guru.com
- The site literally opens up an entire world of talented professionals. I can supplement my full-time staff with the expertise I need - when I need it. – a service client from Elance.com

3.4.3 Knowledge Dimension

The Knowledge-Based View (KBV) of the firm (Grant, 1996), viewing knowledge as a special resource, is a recent extension of the Resourced-Base Theory (RBT) of the firm. The KBV of the firm considers knowledge as the most important strategic resource and argues that the competitive advantage of a firm arises from its capabilities of creating, storing, applying and leveraging knowledge.

KBV can provide a better understanding on IT services and outsourcing for two reasons. First, extensive and specialized knowledge is required for the development, deployment, and use of the IT services and applications (Jayatilaka et al. 2003; Schwarz, 2009). So when a firm feels

that it does not have the knowledge inside to achieve the desired result (e.g. IT services), it will go outside to acquire the necessary knowledge to fill this knowledge gap. Second, knowledge is socially embedded within organizational culture, routines and polices, as well as IT systems. So when turning over the operation of IT services (e.g. ASP) or the development of IT services (outsourcing) to outside providers, a firm will expose itself to all kinds of knowledge risks, such as, exposing or sharing tacit knowledge with outside providers, losing the ability to leverage knowledge, and concerns with the less protection over its intellectual property.

Therefore, three attribute related the KBV perspective of outsourcing emerge out: (1) the need to fill the knowledge gap; (2) the knowledge available from an OSP; and (3) the concerns associated with knowledge risks. We term them respectively as *knowledge gap*, *knowledge availability* and *knowledge risk*. Knowledge gap is defined as the difference between the required knowledge for the development of a need service and the existing internal knowledge of a firm. Knowledge availability is defined as the capacity of an OSP in providing the expertise, skills, and experiences to service clients. And knowledge risk refers to the extent to which a firm exposes to risks associated with knowledge sharing and transferring by relying on an external service provider. The KBV perspective of outsourcing is depicted in Figure 3-6.

The application of the RBT perspective to online sourcing is also evident. An OSP is often viewed as a global network community of experts and creative, or as an online professional community. Some OSPs are designed to provide a wide range of knowledge-intensive services (e.g. Elance.com); and some are specialized on few narrow fields, such as, Topcoder focuses software development and CrowdSpring is specialized on creative industry. Thus, the OSPs become an external pool of resources to for firm in terms of the talented people or knowledge workers. And a firm can always easily find and hire the skilled people to fill its knowledge gaps

or extend its current working team via the online marketplaces. Because the service clients and service providers work remotely and virtually, knowledge associated risk should be a concern for the service clients. But knowledge risk can be mitigated and controlled through the division of the complex work (microsourcing), the comments and rating system on service providers and the service contract.

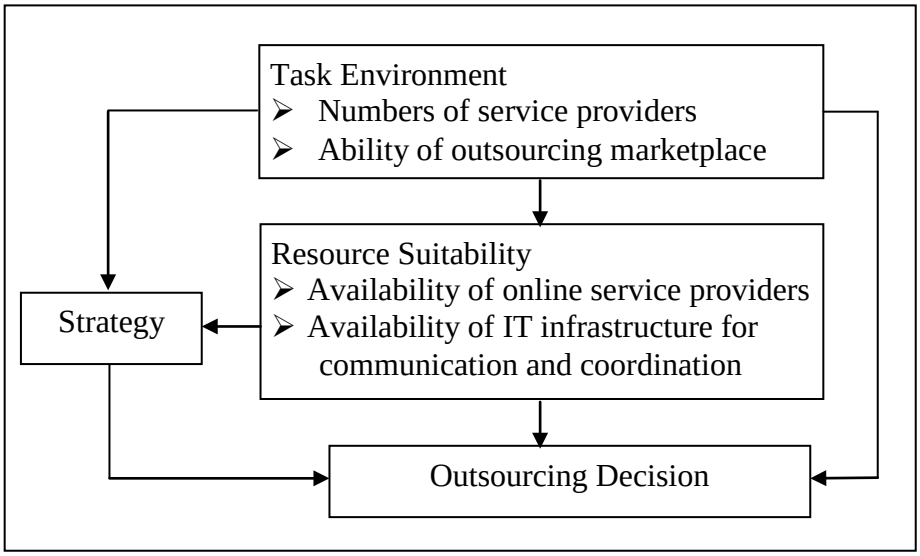


Figure 3-5: The RDT Perspective of Outsourcing

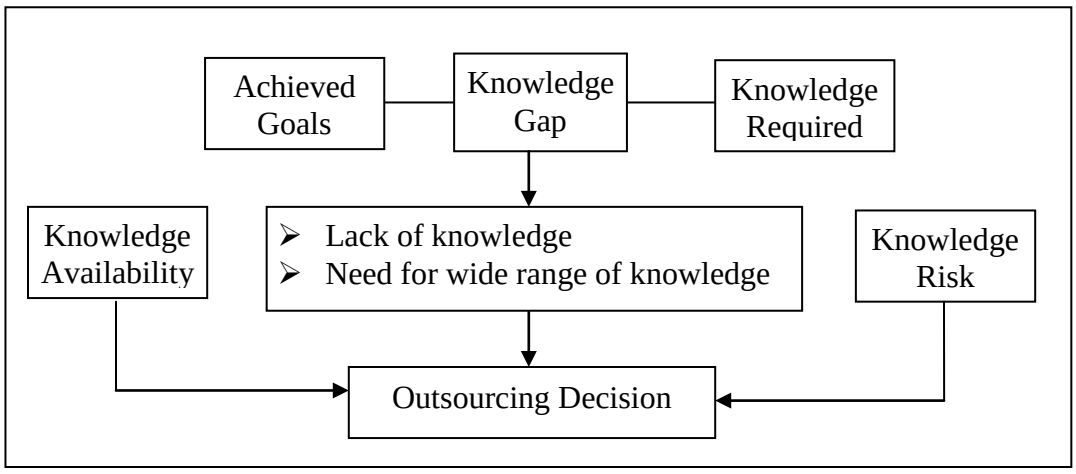


Figure 3-6: The KBV Perspective of Outsourcing

3.4.4 Relational Perspective - Trust

Besides the attributes based on the traditional big four theories of firm discussed above, a few more new attributes that are relevant to online sourcing context need to be considered. Considering the dyadic structure of online sourcing and the governance role of the online platform in governing online sourcing activities, we argue one more dimension that needs to be included in the research framework based on the SET perspective (Blau, 1964) – the relation dimension. Relying on the online marketplace literature (Pavlou & Gefen 2004; McKnight et al. 2002a; Pavlou et al., 2007) and the outsourcing relationship literature (Goo et al., 2009; Goo & Huang, 2008; Lee & Kim, 1999; Feller et al., 2008; Ågerfalk & Fitzgerald, 2008), we further propose trust as the most important relational factors for the engagement of online sourcing of a firm.

The most significant difference between online sourcing and traditional offline outsourcing is that the former occurs in online context. Compared with offline transaction context, online transactions are often perceived to be less legally protected (Pavlou & Gefen, 2004), to be easier to cheat (Ba & Pavlou, 2002), and to be full of risks (Mayer et al. 1995; Lee 1998). All these negative perceptions make buyers hesitate to engage in online transactions. In addition, the lean nature of online environment eliminates many other prominent social cues (e.g., body language) that might be used to assess whether a buyer can be trusted or not (Gefen, 2000, 2002). Therefore, scholars have drawn their attentions and efforts to find the factors that might help to mitigate those negative perceptions (Pavlou et al., 2007; Pavlou & Gefen, 2004; McKnight et al., 2002a). Among those factors, trust might be the mostly often mentioned one (e.g. Gefen, 2002; Gefen et al., 2003; McKnight et al., 2002a; McKnight & Chervany, 2001; Hoffman et al., 1999; Lee & Turban, 2001). Trust has been viewed as the foundation of e-

commerce (Keen, 1999) and the most crucial factor for the diffusion of e-commerce, playing a vital role in helping consumers to overcome the perceptions of risk, insecurity and uncertainty (McKnight et al., 2002a) and to increase online purchasing intention (Gefen et al., 2003).

Besides the online marketplace literature, trust has also been proposed in outsourcing literature as a key factor that influences the relationship between service clients and service providers (Goo et al., 2009, Lee & Kim, 1999, Kishore et al., 2003; Rai et al., 2009, Ågerfalk & Fitzgerald, 2008, Sabherwal, 1999). Trust reflects one party's belief (service clients) that its requirements will be fulfilled through future actions undertaken by the other party (service providers) and is viewed as a necessary condition for the relational governance of the client-provider relationship in outsourcing (Goo et al., 2008; Gopal & KoKa, 2009). Drawing on social exchange theory, Lee & Kim (1999) viewed trust as a key feature of the partner relationship quality between a service client and a service provider. In offshoring context, trust-based governance can help to create an open architecture that facilitate the smooth exchange of information, expertise, and services that are crucial to achieving outcomes but difficult to contractually stipulate a priori (Rai et al., 2009). Therefore, trust increases the ability of the partnership to adapt to unforeseen problems, create conditions for benefits to be extended from one partner to the other and finally positively influences the success of IS offshoring project. In open sourcing context, trust has been proposed as a key social mechanism that overcomes the exchange problems among an open source service network (Feller et al., 2008), and building an atmosphere of trust between clients and the open source software (OSS) development community is a vital factor to create a sustainable ecosystem that will lead to the success of OSS projects.

Like in other outsourcing contexts (e.g. offshoring, OSS), we argue that trust also plays a vital role in online sourcing: trust helps to mitigate the negative perceptions of online service transactions, overcomes the exchange problems, increase the ability of conflict resolution and problem solving, and finally increase the intention of the service clients to engage online.

It's worthy to mention that trust might be the most complex concept that is difficult to define and measure (Rousseau et al., 1998) because of its multiple facets in nature (Mayer et al., 1995, Rousseau et al., 1998). In this study, we follow the trust topology of McKnight et al. (2002a) and view trust as a multi-dimensional concept. According to McKnight et al. (2002, 2004), there are three basic types of trust: trust intention, trust belief, and dispositional trust. Dispositional trust is the most fundamental one, reflecting a person's tendency for "general others". Trust belief is the intermediary one between dispositional trust and trust intentions, reflecting the beliefs towards the attributes (competence, benevolence, and integrity) of the trustee. And trust intention is the one that has direct influence on trusted-related behaviors. Both trust beliefs and trust intentions have two types of trustees: another person, or an institution. This classification of trust is consistent with the Theory of Reasoned Action (TRA) (TRA) (Fishbein & Ajzen, 1975), which posits that beliefs lead to attitudes, which lead to behavioral intentions, which lead to the behavior itself. For simplification, in this study, we use *trust intention*, which is proposed to have direct influences on the trust-based behaviors (online sourcing engagement), to capture the concept of trust in online sourcing context.

According to Pavlou and Gefen (2004), we argue that there are at least two levels of trust that are relevant to online sourcing: institution-level trust and individual-level trust. Pavlou and Gefen (2004) indicated that the way such trust in the collectivity of well-defined community or marketplace affects people's assessments, beliefs, and behavior. These generalized trust beliefs

in the in the community of sellers or the marketplace are “arguably the first determinant of whether a buyer will visit a particular marketplace to look for products; only after making this decision, when a buyer starts considering individual sellers, does dyadic trust enter the picture” (Pavlou & Gefen, 2004). Thus, the institution-based trust towards a community or a marketplace underwrites the dyadic interpersonal trust (Durkheim, 1964).

In this study, we use the term *trust in platform* to represent service clients’ trust intention at the institutional level, and define it as the willingness of firms to rely on an OSP for external resource acquisition. And we use the term *trust in service providers* to represent service clients’ trust intention at the individual level, and define it as the willingness of firms to depend on external online service providers to fulfill their sourcing needs or requirements.

Trust in platform is built on firms’ beliefs in the general environment, institutional mechanisms, and other attributes of an online marketplace. The trusting beliefs in the general environment of an online marketplace reflect “the security one feels about a situation because of guarantees, safety nets, or other structures”, and are usually defined as the institution-based trust (McKnight et al., 1998) or trust in intermediary (Pavlou & Gefen, 2004). Institutional trust stems from the beliefs on social and economic structures (Zucker, 1986) or organizational structure (Rousseau et al., 1998). In online context, institution-based trust is based on the institutional mechanisms of the online marketplace (or the third-party structures), including feedback features, escrow services, and credit card guarantees (Pavlou & Gefen, 2004). Institutional trust provides the major source for the trust-building between buyers and sellers (Lane & Bachmann, 1996; McKnight et al., 2002a), especially when both parties come from different social and cultural backgrounds (Zucker, 1986). Therefore, institution-based trust is often viewed as a necessary condition for online marketplaces where buyers predominantly transact with buyers that are new,

unknown and from different social and cultural backgrounds (Pavlou & Gefen, 2004; McKnight et al., 2002a).

Another type of trust relevant to online sourcing context is the individual level trust among service clients and service providers. In outsourcing context, individual trust (or trust in service providers) generally reflects a service client's beliefs that its requirements will be fulfilled through the future actions undertaken by a service provider (Goo et al., 2009). And it captures the service client's beliefs about the service provider's benevolence, integrity, honesty, and ability in the context of their IT outsourcing relationship (Goo et al., 2009). In accordance with the definition of institutional level trust in this study, we also use *trust intentions* here to capture individual level trust of firms in online context. Thus, *trust in service providers* here is based upon firms' trusting beliefs towards the perceptions of the attributes of service providers and upon their trust intentions towards the OSP where the service providers reside on.

CHAPTER 4. ONLINE SOURCING DECISION PROCESS

Drawing on previous outsourcing and online marketplace literature, we have identified the key theoretical attributes that are argued to be relevant to online sourcing context. These theoretical concepts are summarized in Table 3 along with the definitions, reference literature, and background theories.

By closely examining these theoretical attributes, we can further classify them into three categories in terms of the process of outsourcing decision making: organizational attributes, marketplaces attributes and relational elements (Goo et al., 2009). Based these three sets of decision attributes, we propose a new processual framework of outsourcing decision that can be applied to online sourcing context. The processual framework is depicted in Figure 4-1. In this framework, the organizational attributes, including cost reduction and gaps in terms of resources and knowledge, reflect the internal analysis and the organizational strategic perspectives of outsourcing (Cheon et al., 1995). Once a firm has identified a need to fill its gaps and begins to enter into an outsourcing relationship, it has to assess the attributes of its external environment – the outsourcing marketplace – in terms of its capability to offer resources and knowledge, the risks in engaging an outsourcing relationship, the nature of the resources to supplement its current resources and capabilities, and the necessary for communication and coordination. Finally, trust plays a vital role as key element of the relational governance (Goo et al., 2009; Zaheer & Venkatraman, 1995) of the online sourcing activities between the client firms, the external outsourcing marketplace, and external providers. Firms' trust, building upon the perceptions of service clients on an outsourcing marketplace and the resources available from the marketplace, facilitate the smooth exchange of information, knowledge, and services, overcome the exchanges problems, and finally enable service clients to engage the outsourcing relationship

with the outsourcing marketplace and the service providers from the marketplace. The research framework also suggests how an integrative perspective based on multiple theories shed light together on the outsourcing decision. TCT, RBT, and KBV facilitate the understandings of outsourcing from an organizational strategic perspective. RBT, RDT and KBV contribute the attributes of an external outsourcing marketplace that are needed to be assessed by executives. Finally, trust, one key factor based on social exchange theory (Blau, 1964; Emerson, 1972), plays an important role in the relational governance and the engagement of online sourcing.

Next based on this research framework, we propose a research model that is empirically examined in this study in terms of online sourcing context. We also explore and test the relationships among the theoretical concepts when they are applied to the online sourcing decision making.

Table 4-1: Summary of Theoretical Concepts of Online Sourcing

Theoretical Concept	Definition	Literature	Theory
Cost Reduction (CR)	The perceived cost advantages of online sourcing against with the in-house resources by a firm	Schwarz et al. (2009), Jayatilaka et al., (2003), Ang & Straub (1998), Cheon et al. (1995)	TCT
Resource Gap (RG)	The extent of the disparity between the current internal resources of a firm and the expected resources that are needed to implement its strategy	Schwarz et al. (2009), Jayatilaka et al., (2003), Cheon et al. (1995), Teng et al. (1995), Grover et al. (1994a)	RBT
Resource Complementarity (RC)	The extent to which the external resourced acquired from OSP are good complements to the current resources of a firm		
Resource Utilization (RU)	The extent to which the external resources acquired from outsourcing marketplace can be efficiently and effectively acquired and utilized by a firm		
Task Environment (TE)	The capability of the platform to offer services and resources in a reliable and secure way	Schwarz et al. (2009), Jayatilaka et al., (2003), Cheon et al. (1995), Aldrich, 1976	RDT
Resource Suitability (RA)	The degree of availability of both service providers and the IT infrastructures they relied on for communication and coordination during the service process		
Knowledge Gap (KG)	The difference between the required knowledge and the existing internal knowledge of a firm	Schwarz et al. (2009), Jayatilaka et al., (2003),	KBV
Knowledge Availability (KA)	The capacity of an OSP in providing the expertise, skills, and experiences to service clients		
Knowledge Risks (KR)	The extent to which a firm exposes to risks associated with knowledge sharing and transferring by relying on an external service provider		
Trust in platform (TIP)	The willingness of firms to rely on an OSP for external resource acquisition.	Pavlou & Gefen (2004), Goo et al., (2009), McKnight et al. (2002a, b)	Social Exchange Theory (SET)

Table 4-2 continued

Trust in service providers (TISP)	The willingness of firms to depend on external online service providers to fulfill their sourcing needs or requirements.		

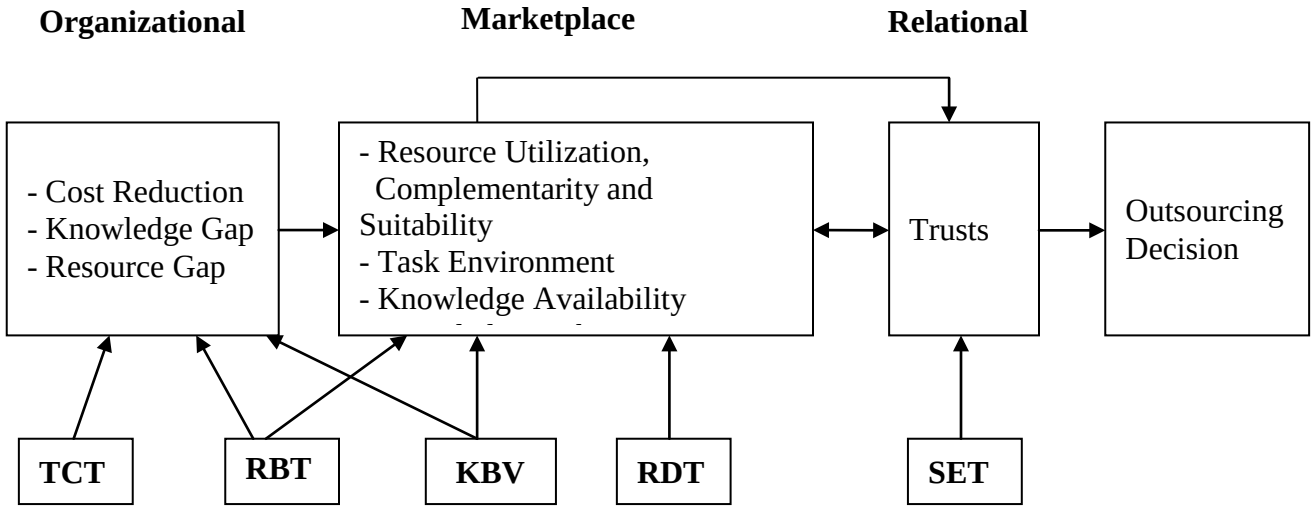


Figure 4-1: Research Framework of Online Sourcing

CHAPTER 5. RESEARCH MODEL AND HYPOTHESES

Cheon et al. (1995) and Jayatilaka et al. (2003) have suggested that different theories of outsourcing do not conflict with each other and they can be integrated together to provide comprehensive understanding on the inquiry of the phenonmenon of outsourcing. Moreover, various theoretical concptes based on different theories are actually interrelated with each other (Cheon, et al., 1995). For example, Clemons and Row (1989, 1992) examined economic reorganization and the role IT plays in it based on the perspective of RBT and TCT. The economic restructuring is viewed as an effort to increase resource utilization and value through explicit coordination of economic activities. However, increasing explicit coordination can create transaction risks (one element of transaction cost) due to the exposure to opportunistic behavior by the other party. And Transaction risk limits the level of coordination that is achievable. Cheon et al. (1995) discussed the role of RBT and RDT in outsourcing decision based on a contingency framework of outsourcing. They suggest that an organizational decision to outsource IS functions depends both on a firm's pool of IS resources and capabilities (RBT perspective) and on the perceptions of the environmental conditions (RDT perspective). While RDT empahsizes that much organizational action is determined by environmental conditions, RBT states the necessity of the critical resources and capabilities that a firm needs for the competitive advantages.

Although these interrelations among various theoretical concepts have been discussed conceptually in literature, to our knowledge, no empirical examination has been conducted from an integrative perspective in outsourcing context. Next, we propose a research model that describes the interrelations among the theoretical concepts in the context of online sourcing

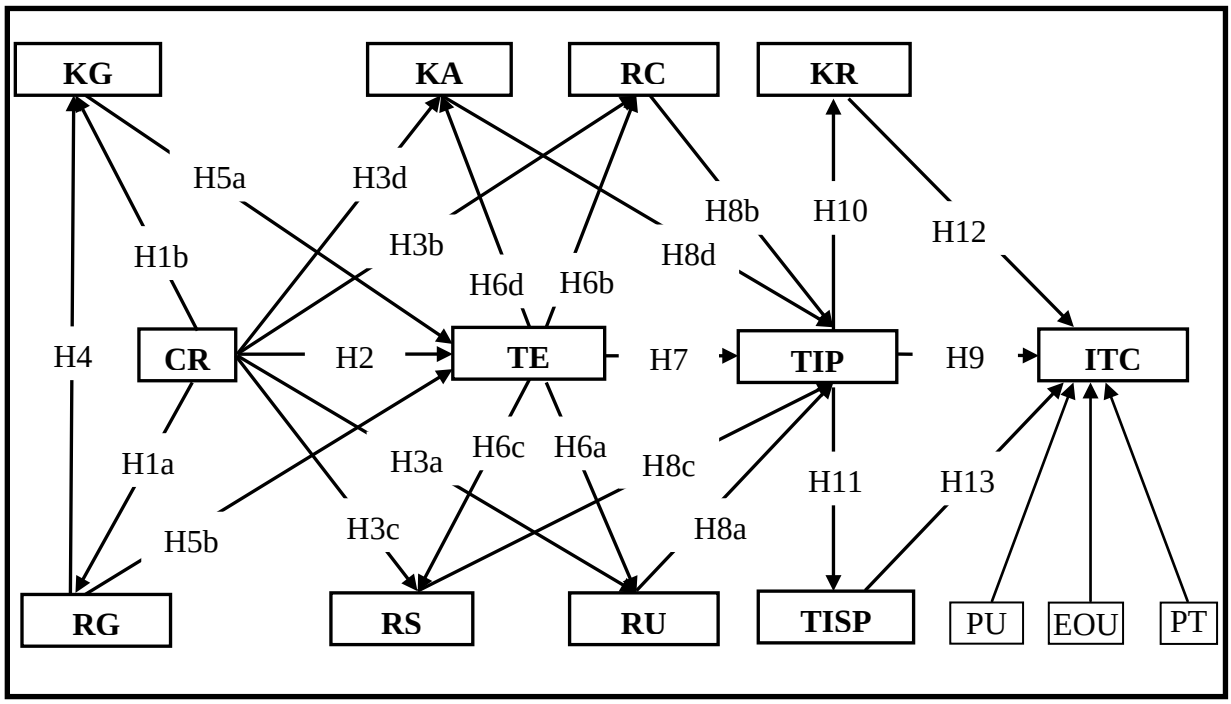
based on the integrative framework of outsourcing proposed above. The research model is depicted in Figure 5-1.

5.1 Organizational Attributes – Economic and Strategic Motivations

Based on the aforementioned research framework, TCT, RBT and KBV shed light together on outsourcing decision from an organizational strategy perspective. TCT suggests the economic driver for a firm to enter into an outsourcing relationship: to reduce the cost of operation and production. RBT views a firm as a collection of resources and capabilities. To sustain its competitive position, a firm must be able to acquire and deploy the critical resources and capabilities in a most costly an efficient way. And KBV, treating knowledge as a special resource, is particularly important for the inquiry of IT outsourcing phenomenon, because IT services and applications require extensive and specialized knowledge. According to Cheon et al. (1995), we argue that TCT, RBT and KBV are interrelated with each other and they collectively suggest economic and strategic motivations for outsourcing from an intra-organization perspective: to reduce cost and to fill the gaps in terms of resources and knowledge.

5.1.1 Cost Reduction

The challenge for the executives of firms today is to accomplish more (value creation) with fewer inputs of resources. One means for executives to create business value is via dramatic cost savings (Straub et al., 2008; Verwaal et al., 2008). This pressure is seen as the most significant factor that drives corporate interest today (Grover et al., 1994a). The pressure to reduce cost makes executives become more prudent in investing on the resources that are needed for operation and production.



Note:
1. CR - Cost Reduction, GP - Resource Gap, KG - Knowledge Gap, RC - Resource Complementarity, RU - Resource Utilization ,TE -Task Environment , RS - Resource Suitability, KA - Knowledge Availability, KR - Knowledge Risk, TIP - Trust in Platform, TISP -Trust In Service Provider, ITE – Intention To Engage
2. Contol variables: PU - Perceived Usefulness, EOU - Ease of Use, PTU - Perceived Transaction Uncertainty

Figure 5-1: Online Sourcing Research Model

To sustain the strategic flexibility and adapt to environment changes, firms often prefer to focus on strategic resources and cut the budget for non-strategic resources.

This trend becomes even more significant for IT investments considering the complexity and accelerated changes in the nature of IT technology (Grover et al., 1994a): senior executives often view IS as an overhead or as a cost burden (Dibbern et al., 2004). According the "Enterprise IT Investment Trends" survey by Ernst & Young (2009), IT cost reduction becomes the top priority for CIOs in 2009-2010: 50% of CIOs have listed IT cost reduction as "most important" in their agenda. This trend also reflects a concept shift in IT management recently: from a focus on technology to a focus on better information utilization and management that lead to performance improvements and competitive breakthrough (Teng et al., 1995). Thus, "rather than spend time and resources building an internal computing infrastructure, many senior executives believe that efforts should be concentrated on effective use of information and the creation of new analytical data to improve management's responsiveness to market changes" (Teng et al., 1995).

To avoid the obsolescence risk due to the changing nature of IT technology (Clarl et al., 1995; Grover et al., 1994a), firms often choose the most conservative investing strategy in IT resources and consider other options to acquire critical IS resources, e.g. outsourcing. Accordingly, a firm tends to take the wait-and-see approach toward the state-of-the-art technology to minimize the losses incurred if a certain technology fails to deliver on its investment (Gupta & Gupta, 1992). Moreover, the cost reduction strategy will force executives to prohibit the investment in IT hardware, software, and applications, and IT staffs that are not considered as strategic assets. Consequently, firms may not have the needed in-house technical expertise for the introduction, development, and management of new technologies, and will suffer a critical shortage in both IS resources and IT talent.

Accordingly, we argue that cost reduction strategy of a firm will increase the gaps within firms in terms of both resources and knowledge. And here is the hypothesis:

H1: The more that a firm tries to cut cost, the more gaps that it will have in terms of both resources and knowledge.

H1a: The more that a firm tries to cut cost, the more gaps that it will have in resources and capabilities.

H1b: The more that a firm tires to cut cost, the more gaps that it will have in knowledge.

Besides the influences within firms, the cost reduction strategy/pressure will also shape the perceptions of executives towards the external environment of firms. Strategy of a firm, according to Mintzberg (1987), can be defined as (1) a plan (i.e., some sort of consciously intended course of action); (2) a ploy (which is a specific maneuver intended to outperform a competitor); (3) a pattern (i.e., a stream of realized actions); (4) a position (i.e., a means of matching between an organization and its external environment); and (5) a perspective (which is shared among organizational members, and the content of which consists of not just a position, but also an ingrained way of perceiving the world). This definition indicates that strategy of a firm reflects the collective intention and shared perspective of executives. Therefore, strategy of a firm will act as a frame of reference (March & Simon, 1958) that allocates organizational attentions and guide organizational actions. Based on this, cost reduction, as a firm strategy, will drive executives to look for the cost saving alternatives or solutions from the external environment. Thus, outsourcing becomes a strategic response of necessity for firms (Teng et al., 1994) to search for cheap and effective resources from the external marketplace. Theoretically, the cost advantages of outsourcing are achieved through the economies of scale and scope of obtained by service providers (Straub et al., 2008; Lacity et al., 1994; Gupta & Gupta, 1992;

Grover et al., 1994a). An outsourcing service provider might be able to bring a large scale of IT technology, skill, and knowledge to a wider array of IS situations since it pools projects from many service clients. This is often referred as the economies of scale. Similarly, the service provider is also able to exploit economies of scope because it carries out a variety of IT tasks to many clients (Grover et al., 1994a). Therefore, firm are able to benefit indirectly from these economies of scale through attractive pricing of IT products and services provided by IT service providers (Dibbern et al., 2004). Additionally, outsourcing can also make the IT costs become more predictable and controllable since the responsibility of cost overruns is often placed on the service provider (Grover et al., 1994a). In the context of online sourcing, because an OSP is able to brings together a large pool of providers from anywhere of the globe, clients are often able to exploit the low price of services due to the "global labor arbitrage" and the competitions among providers.

Therefore, the more that a firm tries to cut cost, the more that it will view outsourcing as an effective means for dramatic cost savings (Straub et al., 2008; Verwaal et al., 2008), and the more that it will have positive perceptions towards the external marketplace, the nature of the resources and the knowledge available from the marketplace.

Accordingly, we make the hypotheses as the followings:

H2: The more that a firm tries to cut cost, the more positive perceptions it will have towards the capabilities of outsourcing marketplace (Task Environment).

H3: The more that a firm tries to cut cost, the more positive perceptions it will have towards the other attributes of outsourcing marketplace in terms of the nature of resources and the knowledge available from the marketplace.

H3a: The more that a firm tries to cut cost, the more strongly will it perceive that the resources from an OSP will be effectively utilized (resource utilization).

H3b: The more that a firm tries to cut cost, the more strongly will it perceive that the resources from an OSP are good complement to its current existing resources (resource complementarity).

H3c: The more that a firm tries to cut cost, the more strongly will it perceive the resources from an OSP are available in communication and coordination (resource suitability).

H3d: The more that a firm tries to cut cost, the more strongly will it perceive the ability of an OSP to offer knowledge, expertise, skills, and talented people (knowledge availability).

5.1.2 Resources and Knowledge Gaps

Resourced-based theory indicates that resources and capabilities of the firm are the foundation for its long-term strategy (Grant, 1991). Hence, a firm must be able to constantly assess its internal resources and capabilities and match them with the strategy. Once a firm identifies the gaps existing between its current resources and the strategy, a strategic response must be activated to fill the gaps, e.g. increasing investment in the internal resources, strategic alliance with other firms, or acquisition from the external environment via outsourcing. Besides the need to satisfy a strategy, the resources gaps of a firm may also come from its strategy (e.g. cost reduction) or its intention to gaining the competitive advantages. In an environment that is characterized by dynamic, competitive and uncertain, firms must be able to focus on their core businesses to gain the competitive advantages (Prahalad & Hamel, 1990). Focusing on the core

businesses also helps firm to become more flexible and adaptable to the environmental changes. However, when a firm focuses on core businesses or competencies, it will limit the investment on other non-core resources and capabilities and finally cause the resource gaps inside of the firm.

Within the context of outsourcing, the IT resources may not be considered as the core businesses by executives of the firms outside IT service industry. For example, in the Kodak outsourcing arrangement, Kathy Hudson, the chief information officer stated that: "IS is not the business that Kodak should be in . . . .We're trying to get out of day-to-day, nitty-gritty technology choices" (Keyes, 1993). Thus, organizations that outsource IT activities that are not strategic can concentrate energies on distinctive resources that are directly related to value creation for the firm (Straub et al., 2008).

Moreover, the rapid changing nature of IT technology also makes executives worry about the obsolescence risk of IT technology and prevent them from investing in IT resources inside (Gupta & Gupta, 1992). This "wait-and-see" strategy towards IT technology can also be extended to IT staffs: firms would not like to spend much money on IT training to update the knowledge and skill set of their IT staffs because they worry about the new knowledge will be out of date quickly.

Indeed, extensive and specialized knowledge is required for the development, deployment, and use of the IT services and applications (Jayatilaka et al. 2003; Schwarz, 2009). The IT products and services in firms are primarily derived from the skills and knowledge of the IS workers (Slaughter & Ang, 1996). Thus, the degradation of IT resources of a firm will make the internal need for IT staffs dramatically lower. Furthermore, even if a non-IT-related firm wishes to build up internal core competencies in IS, they face fundamental problems of high staff

turnover and severe competition for IS workers from IT-related firms (Slaughter & Ang, 1996) because the latter can offer higher salaries, better training and more career opportunities. Actually, the attitudes of the non-IT-related firms towards IT resources have made these resources and corresponding IT skills and knowledge move to the IT-related firms or the IT service providers. Thus, non-IT-related firms will often fall short of IS skills and knowledge because of the volatility of information technology and dynamics of IT job market (Slaughter & Ang, 1996). Therefore, the reduction of IT resource of a firm will cause the loss of the IT staffs, and in turn cause the loss of the IT skills, knowledge, and capabilities. Accordingly, we can hypothesize that:

H4: The more that a firm has IS resources gaps, the more the IS knowledge gaps it will have.

Both RBT and RDT indicate that, to enhance the competitive advantage a firm not only needs to exploit its existing resources and capabilities, but also needs to acquire resources from the external environment. In order to fill the gaps of resources and capabilities, the external acquisition of complementary resources will become necessary for the improvement of the strategy (Grant, 1991). In this respect, when the performance of a firm's existing resources is below the expected or desired level, outsourcing can be a strategic response for the firm to cover the difference or gaps. And applying this perspective to IT resources, when information quality, IS support quality, and other performance measures of these resources fall short of expectations, IT outsourcing becomes a viable strategic option for the organization (Teng et al., 1995, Lacity & Hirschheim, 1993a). Through outsourcing, a firm can also obtain scarce IS human resources and technological resources from the external environment to fill the critical shortage of IS talent inside of the firm (Teng et al., 1995; Gupta & Gupta, 1992). Thus, outsourcing provides firms

with increased flexibility to adapt to changes in technology and markets, enables firms to focus on their core businesses, and helps firms to more economically manage the dynamics of the IS skills market (Slaughter & Ang, 1996). Generally speaking, the more that a firm perceives its IT resources fall short of expectations, the more that it will have the need to fill those gaps, and the more that it would like to rely on external environment for the acquisition the critical IT resources and capabilities. In other words, a firm with more gaps inside will be more likely to trust and rely on the abilities of an external outsourcing marketplace for the acquisition the critical IT resources and knowledge. Accordingly, we can hypothesize that:

H5: The more that a firm has gaps inside, the more strongly will it perceive an external outsourcing marketplace to have the capabilities to provide the critical resources that it needs.

H5a: The more that a firm has resource gaps inside, the more strongly will it perceive an external outsourcing marketplace to have the capabilities to provide the critical resources that it needs in general.

H5b: The more that a firm has knowledge gaps inside, the more strongly will it perceive an external outsourcing marketplace has the capabilities to provide the critical resources that it needs in general.

5.2 Marketplace Attributes – The External Perspective

When a firm has identified the need to fill the gaps in terms of resources and knowledge, outsourcing becomes a strategic action to cover those gaps. Based on the RDT perspective, entering into an outsourcing relationship with external providers will increase the dependency of a firm on external environment. Therefore, before engaging in an outsourcing arrangement, a

firm needs to carefully assess the attributes of an external outsourcing marketplace in terms of its capability to offer resources and knowledge, the risks to engage an outsourcing relationship, the use of resources, the communication and coordination with service providers, and the nature of the resources as complement to current resources. Based on the perspectives of RBT, RDT and KBT, those attributes of an outsourcing marketplace are, respectively, task environment, knowledge availability, knowledge risks, resource utilization, resource suitability, and resource complementarity.

Resource dependency theory (Aldrich, 1979; Pfeffer & Salancik, 1978) indicates that to survive firms must rely on the external environment for the acquisition of critical resources. Applied to outsourcing context, outsourcing is a strategic choice intended to increase the dependence of one organization upon another in order to obtain critical resources (Jayatilaka et al., 2003). Therefore, when turning to an external outsourcing marketplace for critical resources, a firm first needs to assess the capability of this marketplace in supplying resources and capabilities. Here we term the capacity of an outsourcing marketplace to provide critical resources to firms as "task environment" (Schwarz et al., 2009; Jayatilaka et al., 2003). Generally, the more competent service providers are available from an outsourcing marketplace, the more discretion that a firm will have over the external environment and service providers (Straub et al., 2008; Jayatilaka et al., 2003), and the more benefits that a firm can obtain from an external outsourcing marketplace.

Therefore, in the context of online sourcing, a firm also needs to access the task environment of an OSP before it engages a long-term relationship with it. Here, an OSP not only works as the external resources pools for firms, but also plays the role of an online intermediary for the transactions between firms and their service providers. According to Pavlou & Gefen

(2004), “an online intermediary is a third-party institution that uses the Internet infrastructure to facilitate transactions among buyers and sellers in its online marketplace by collecting, processing, and disseminating information”. Intermediaries can reduce transaction uncertainty by instituting regulations that restrict the ability of a seller to engage in opportunistic behavior, provide a reliable and secure environment, and encourage benevolent transaction norms (Pavlou & Gefen, 2004).

Thus, a firm will weigh the task environment of an OSP from the following two aspects: (1) its capacity to provide resources and capabilities; and (2) its capability to provide a reliable and safeguarding overarching environment for online services exchanges between clients and providers. The first one is usually measured as the number of competent service providers available from an OSP; and the second one is built upon the institutional structures (Pavlou & Gefen, 2004; Mcknight et al., 2002a) of an online marketplace. Institutional structures are mechanisms, such as feedback features, escrow services, and credit card guarantees, which are implemented or created by third parties to create conditions that will facilitate the success of online transaction (Pavlou & Gefen, 2004). Thus, the concept of task environment captures the general perceptions of firms towards the institutional context of an OSP to provide critical resources and capabilities, and to facilitate the processes of resources acquisition.

Hence, we argue that the general perceptions of firms towards an OSP (task environment) will influence the perceptions of firms towards the other attributes of the OSP, e.g., the ability to provide knowledge, the use of online resources, the communication and coordination between clients and providers, and the nature of online resources as good complement to firms’ current resources. For example, the more competent service providers that an OSP can provide, the more knowledge that this OSP can offer from the perspective of service clients. That’s because most of

the services delivered from an OSP are extensively knowledge-based. Thus, the resources and capabilities available from the OSP are fused together with the knowledge, skills, experiences, and expertise in the eyes of service clients. Additionally, the more competent service providers that an OSP provides, the more resources and capabilities that are available for selection, thus, the easier that firms can find the resources that can be counted as good complements to their currents resources or to extend their current working team.

Furthermore, a reliable and efficient task environment can also facilitate the utilization of resources acquired from an OSP and the communication and coordination between firms and their service providers. As the marketplace intermediary (Pavlou & Gefen, 2004), an OSP provides firm with the necessary institutional structures and IT infrastructures for the use of resources and the communication with the service providers. For example, the contract management system, the bidding system, and profile system can make the process of finding, selecting and managing the resources online easier, quicker, and more efficient. Moreover, virtual work management system, monitoring system, and other online IT infrastructures can make the communication and coordination between firms and their service providers more continent and reliable. Accordingly, we can hypothesize that:

H6: The perception of the task environment of an OSP has positive impact on the perceptions of other attributes of the OSP by firms.

H6a: The perception of the task environment of an OSP has positive impact the perception of its resource utilization by firms.

H6b: The perception of the task environment of an OSP has positive impact the perception of its resource complementarity by firms.

H6c: The perception of the task environment of an OSP has positive impact the perception of its resource suitability by firms.

H6d: The perception of the task environment of an OSP has positive impact the perception of its knowledge availability by firms.

5.3 Relational Perspective: Trust

5.3.1 Attributes of OSP and Trust

Trust research literature (e.g., McKnight et al., 2002a; Kee & Knox, 1979; Mayer et al., 1995) has indicated that trust is a multidimensional construct. For instance, Kee & Knox (1970) proposed a set of five trust-related constructs: dispositional factors, situational factors, perceptions of the other, subjective trust, and behavioral trust. Mayer et al. (1995) identified three types of trust: propensity to trust, trust intention (willingness to be vulnerable to another), and perceptions of trustworthiness (cognition-based trust). Drawing on prior trust research literature and the framework of the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), McKnight et al. (2002a) proposed a broad framework of trust that can be applied to the context of e-commerce. They posit that "trusting beliefs (perceptions of specific Web vendor attributes) lead to trusting intentions (intention to engage in trust related behaviors with a specific Web vendor), which in turn result in trust-related behaviors". Trusting beliefs reflects the confidence of truster in the trustee's attributes that are beneficial to the truster. And trusting beliefs is grounded from three types of attributes of trustee: competence (ability of the trustee), benevolence (trustee caring and motivation to act in the truster's interests), and integrity (trustee honesty and promise keeping). Therefore, according to McKnight et al. (2002a), trusting intentions is based upon the truster's perceptions towards the attributes of trustee.

Applied to online sourcing context, it can be argued that the perceptions service clients towards the attributes of an OSP will lead to their trusting intentions towards the OSP. For instance, Pavlou and Gefen (2004) indicated that the effectiveness of online marketplace mechanisms and the trusting beliefs in the intermediary could build buyers' trust in the community of online sellers.

Therefore, the theoretical attributes on OSP proposed in this study, including task environment, resource utilization, resource suitability, resource complementarity and knowledge availability, reflect service clients' trusting beliefs in the competence and benevolence of the OSP to satisfy their strategic sourcing needs, and thus, will positively influence their trusting intentions to engage the outsourcing relationship with the OSP. Accordingly, we can hypothesize that:

H7: The general perception towards the environment of an OSP – task environment, has positive impact on the trusting intentions to engage in outsourcing relationships with the OSP (trust in platform).

H8: The perception of service clients towards other theoretical attributes of an OSP also has positive impact on their trusting intentions towards the OSP.

H8a: Service clients' perception of resource utilization has positive impact on their trusting intentions towards the OSP.

H8b: Service clients' perception of resource complementarity has positive impact on their trusting intentions towards the OSP.

H8c: Service clients' perception of resource suitability has positive impact on their trusting intentions towards the OSP.

H8d: Service clients' perception of knowledge availability has positive impact on their trusting intentions towards the OSP.

5.3.2 Trust in Platforms and Trust in Service Providers

Trust transference logic (Stewart, 2003) indicates that trust transfer may be made from a place, an industry association, or an entity to another individual. For instance, a salesman could transfer the burden of establishing trust from himself to a "proof source" — an industry association (Milliman & Fugate, 1988). Applied to online context, trust in the intermediary could build buyer trust in sellers; that is, buyers who trust the intermediary should also trust the sellers because of their perceived association with the intermediary (Pavlou & Gefen, 2004). And trust can also transfer from a context to an individual seller. Context refers to a situation, in which a target is encountered, specifically the institutional structures in the situation (Stewart, 2003). For instance, a context may be an online marketplace or a channel such as WWW (Stewart, 2003).

Following the same logic, we argue that trust in an OSP could build trust in the service providers from the same sourcing marketplace. An OSP is often viewed as the external pool of resources and capabilities, or as an online community of global service providers. By participating in a trustworthy OSP, a service provider sends a positive signal about its own trustworthiness (Shapiro, 1987) to firms. Thus, firms that trust the marketplace should also trust the service providers because they are perceived to be associated with the marketplace (Pavlou & Gefen, 2004). In addition, an OSP also provides the necessary rules, structures, and guarantees that encourage trustworthy behavior (Zucker, 1986) and facilitate the transaction success. Therefore, the institution-based trust in platform will make firms perceive that the appropriate conditions are in place online, and build their trust in the service provides from the same sourcing marketplace. Accordingly, we have the following hypothesis:

H9: Trust intentions in OSP increases firms trust intentions in online service providers.

5.3.3 Trust in Platform and Knowledge Risks

Most online buyer-seller relationships are often characterized by high level of risks because of the opportunistic behaviors of sellers, information asymmetry, and information privacy concerns (Mishra et al., 1998; Pavlou & Gefen, 2004; Pavlou et al., 2007). In the online sourcing context, when turning over the IT services to external service providers from an OSP, a firm will be exposed to all kinds of knowledge risks, including knowledge sharing and disclosing risks, the risk to lose knowledge leverage ability, and concerns with the less protection over organization specific knowledge (Schwarz et al., 2009). Therefore, besides the normal online transaction risks, firms are more concerned with the risks associated with knowledge. According to Chiles & McMackin (1996), trust and risk are two closely-interrelated subjective concepts that are embedded in social relations. Without vulnerability to the risk of opportunism, there is no need to trust; and some degree of risk must be present so that there is a test of trust (Dasgupta, 1988). Thus, trust can increase one's willingness to be vulnerable to the risk of opportunistic behavior of another (Chiles & McMackin, 1996), reduce expectations of opportunistic behavior (Sako & Helper, 1998), and diminishes risk perceptions (Anderson & Weitz, 1989; Gefen, 2000). Trust is also important in the self-disclosure of two transaction parties: confidence in an e-vendor's beneficial conduct will reduce the risk associated with information disclosure, thereby enhancing consumers' willingness of self-disclosure (Cho, 2006). Although the effect of trust on risk has been empirically reported in research on e-commerce and virtual communities (Gefen, 2002; Luo, 2002; Pavlou et al., 2007), its effect on knowledge risks in online sourcing context is not examined. Thus, in this study, we will examine the effect of trust on knowledge risks specific to online sourcing. And accordingly, we hypothesize that:

H10: Trust intentions in OSP decreases firms' perception of knowledge risks associated with the engagement of online sourcing.

5.3.4 Trust, Knowledge Risks, and Online Sourcing Engagement

Trust has been considered as one of the major social mechanisms that lead to purchasing behaviors in both e-business literature (e.g., Keen, 1999; McKnight et al., 2002a; Gefen et al., 2007) and outsourcing literature (Goo et al. 2009, Lee & Kim, 1999, Kishore et al., 2003; Rai et al., 2009). For instance, trust can help consumers to overcome perceptions of uncertainty and risk and engage in "trust-related behaviors" with Web-based vendors, such as sharing personal information or making purchases (McKnight et al., 2002a; Pavlou & Gefen, 2004). Trust in outsourcing relationship reflects the quality of the relationship, leading to the cooperation, active information exchange, and harmonious conflict between two contractual parties (Goo & Huang, 2008; Rai et al. 2009). Thus, trust in service providers can encourage service clients to engage outsourcing relationships with their service providers (Goo et al., 2009).

In the context of online sourcing, trust is particularly important because firms are faced with overwhelming social uncertainties, not knowing what the other party will do (Pavlou & Gefen, 2004). Thus, trust allows firms to subjectively rule out many undesirable possible behaviors on the part of the party they trust and so reduce the myriad of possible outcomes to a more manageable level (Gefen, 2000). We have proposed two types of trust are relevant to online sourcing: trust in platform and trust in service providers. Trust in platform reflects the willingness of firms to depend on an OSP for resource acquisition. Trust in platform also reflects the trust in the community of online sourcing providers (Pavlou & Gefen, 2004) because an OSP is often viewed as a global community of talented. Therefore, following Pavlou and Gefen (2004), trust in platform as a whole will help overcome the negative perceptions and provide the

necessary conditions for online transactions, and finally lead to firms' intentions to interact with the outsourcing marketplace and the community of members. Additionally, trust intentions in online service providers also encourage firms to look for external resources from an OSP, thus, lead to their engagement in online sourcing relationships with the OSP. Therefore, we have:

H11: Trust in platform increases firms' intentions to engage in online sourcing relationships with an OSP.

H12: Trust in service providers increases firms' insertions to engage in online sourcing relationships with an OSP.

Risk is defined as the buyer's own subjective probability of suffering a loss (Chiles & McMackin, 1996). Risk perceptions have been shown to erode exchange relationships in general (e.g., Rousseau et al., 1998), and they have also been proven to negatively influence consumer adoption of e-commerce (Pavlou, 2003) and online purchasing intentions (Pavlou & Gefen, 2004). If buyers are worried about the outcome of online transactions due to the numerous possibilities of loss, they are likely to restrain their participation in online exchange relationships (Pavlou et al., 2007).

The relationship between perceived general risk and online intentions to transact with individual sellers has been examined in literature (e.g., Gefen, 2002, Pavlou, 2003). In this study, we examine the relationship between the risks specific to knowledge sharing and transferring – knowledge risks – and online intentions to acquire resources from the OSP. Following the logic of TRA, the perceived knowledge risks increase negative expectations, leading to a negative attitude that should result in a negative influence on online sourcing engagement intentions of firms. Therefore,

H13: Perceived knowledge risks will decrease firms' insertions to engage in online sourcing relationships with an OSP.

5.4 Control Variables

The research model incorporates three control variables that may influences firm intention to engage online sourcing: perceived online transaction uncertainty, perceived usefulness of the website and ease of use of the website. Perceived uncertainty refers to the degree by which the outcome of a transaction cannot be accurately predicted by buyers (Pavlou et al., 2007). Uncertainty is one of the most often mentioned disablers that make buyers reluctant to engage in online exchange relationships with sellers (Pavlou et al., 2007; Gefen, 2000). Besides uncertainty, two technological attributes of the Web site, namely perceived usefulness and perceived ease of use as identified by TAM (Davis 1989; Davis et al., 1989), are generally recognized to influence the buyer adoption of online transactions (Gefen et al., 2003; Mathwick et al., 2001). A Web site is information technology in essence, and thereby, online purchase intentions should be explained in part by the technology acceptance model (Gefen et al., 2003). We, therefore, include perceived usefulness and ease of use of the website of an OSP as the control variables in this study. Next we discuss the research methodology used in this study.

CHAPTER 6. RESEARCH METHODOLOGY

6.1 Operationalization of Constructs and Scale Development

Although several comprehensive theoretical frameworks have been applied to outsourcing research (Cheon et al., 1995; Jayatilaka et al., 2003; Schwarz et al., 2009), no attempt has been made to test the interrelations among the theoretical concepts with those frameworks. Furthermore, most of the theoretical concepts were only discussed conceptually in literature and have not been operationalized. As described above, we have developed 9 constructs based on traditional "big four" outsourcing theories and 2 trust constructs based on trust literature and outsourcing relationship research.

Two of the 9 theory-based constructs, namely cost reduction and resource gap, and 2 trust constructs have existing items. Hence, we adapted existing items for them. The construct of cost reduction has 5 items based on two resources: 4 items to capture the "perceived cost advantage" from Ang and Straub (1998) and 1item to capture cost control and predictability based on Grover et al. (1994a). Items for resource gap construct come from three literatures: 1 item from Teng et al. (1995), reflecting resource discrepancy or disparity; 3 items from Lacity & Hirschheim (1993a), representing the perceived low performance of existing resources; and 1 item Grant (1991), reflecting the shortage of internal resource. For the two trust constructs, we adapt the scales that were developed and tested (with Cronbach's alpha > 0.90) in e-commerce research by McKnight et al. (2002a, b). We also adapted the items of control variables from current literature. The items of perceived usefulness and ease of use are adapted from Cenfetelli and Schwarz (2010), and items for perceived online service uncertainty are adapted from Pavlou et al. (2007). The intention to use online sourcing is adapted from Goo et al. (2009). All these items are depicted in Table 6-1.

For the other 7 theory-based constructs, there are no specific existing items in previous outsourcing literature. However, conceptual discussions of those constructs are scattered in outsourcing literature (e.g., Schwarz et al., 2009; Jayatilaka et al., 2003; Cheon et al., 1995) and their reference theory literature. Based on the definitions and discussions of these theoretical concepts in outsourcing literature (e.g. Jayatilaka et al., 2003; Schwarz et al., 2009) we developed new items for these 7 constructs.

We adopt a two-phase strategy for the new items development in this study. In the first phase, we employ the deductive approach (Hinkin, 1995) to identify the relevant items for each construct via literature review. Following Churchhill (1979) and Netemeyer et al. (2003), three criteria are adopted for the development of the new items: (1) the items should reflect the definition of the construct; (2) the items should cover different dimensions of the construct; and (3) items should be located from previous literature. These criteria are applied to promise content validity and face validity (Netemeyer et al., 2003) of the constructs. For instance, in terms of *resource complementarity*, the construct is adapted from resource heterogeneity, which reflects the extent to which the application differentiates the firm (Schwarz et al., 2009). Resource complementarity not only reflects the difference of external resource from internal resource, but captures the nature of online resources as good complement to current resources of firms (Espino-Rodríguez & Gil-Padilla, 2005). Resource complementarity also reflects the nature of online resources as non-core or non-strategic resources to firms (Watjatrakul, 2005; Barney, 1991). Therefore, the items of resource complementarity should reflect the nature of external online resources as complement to the core resources and capabilities (Espino-Rodríguez & Gil-Padilla, 2005), as non-strategic resources (Watjatrakul, 2005), and help to focus on core

resources and capabilities (Barney, 1991). Finally four items are developed for resource complementarity. All the new items are also summarized in Table 6-1.

In the second phase, using the new items as the basic theoretical codes, we conduct a qualitative content analysis on the clients' feedbacks and cases published on the websites of several major OSPs. In the coding process, we first try to assign the basic theoretical codes to the text line by line; if no current code could be assigned for a line, we see whether a new code that is relevant to any of the theoretical constructs in research model emerges out. Then this new code should be considered as a new item for a construct. For the detailed coding, please refer the qualitative content analysis in the appendix. The primary purposes of the second phase include: (1) to confirm the new developed items by analyzing the clients' perspectives of using online sourcing; (2) to examine the content validity of the new items by looking if there is new code emerging out; and (3) to identify new items that may be overlooked in the first phase. Feedbacks of 43 clients from four major OSPs, including vWorker.com (formerly RentACoder), Elance.com, Guru.com and Odesk.com, are analyzed in the second phase. These cases and feedbacks of firms indicate the reasons why firms choose to use online sourcing as an outsourcing option, and thereby, contain key information of the theoretical attributes in outsourcing decision making. The qualitative content analysis result is also summarized in Table 6-2. The numbers in Table 6-2 indicate that how many times a code (or an item) is mentioned by the firms from an OSP. As illustrated in Table 6-2, except knowledge risk all items for other constructs are mentioned at least once by the firms in the sample. And most of the items are mentioned more than 3 times. No new code relevant to the 7 theoretical constructs emerged, which indicates that the newly developed items have covered almost all the theoretical aspects of constructs and that they should have content validity. Items that are mentioned only once by

firms (e.g., TE1 and TE2) may be considered as problematic, but they are still retained for data collection. Further analysis will be done later after data collection via quantitative techniques. None of the items of knowledge risks are mentioned by the firms in this sample. That is because the OSP providers are more likely to publish positive feedbacks of their service clients. Thus, items of knowledge risks – the negative theoretical attribute of outsourcing decision – cannot be identified in the cases and feedbacks available from their websites. But we choose to keep the items of knowledge risks and leave further analysis for data analysis section later.

Finally, all variables in this study were measured as latent, reflective constructs that are captured indirectly with direct measurement items. And all items were assessed on a seven-point Likert-type scale anchored at *-3= Strongly disagree, 0 = Neutral, and 3 = Strongly agree*.

6.2 Data Collection

The "key informants" data collection methodology (e.g., Segars & Grover, 1998; Goo et al., 2009) is used in this study because the respondents are responsible to provide information regarding their organizations. The targeted respondents assume the role of a key informant and are able to provide information on a particular unit of analysis by reporting on group or organizational properties (Goo et al., 2009). Therefore, within the context of this study, it was important to not only identify firms that actively engaged in online sourcing activities, but to also identify respondents within those firms who were intimately involved with, and most knowledgeable about, the online sourcing practice. Thus, the firms that has already involved in online sourcing activities with one of the OSPs should be the analysis units for this study, and those who take charge of online sourcing activities and processes for these firms should be the key respondents.

Table 6-1: Items of Constructs

Construct	Literature	Items
Cost Reduction	Ang & Straub (1998); Grover et al. 1994a	CR1: Using online sourcing with this site has reduced our technological input (e.g. hardware, software, and other assets) costs.
		CR2: Using online sourcing with this site has reduced our technical personnel costs.
		CR3: Using online sourcing with this site can help us to control and predict our costs.
		CR4: It is cheaper to manage the needed resources in house than to rely on online sourcing providers via this site.
		CR5: We have the scale and volume to justify the needed resources in house.
Resource Gap	Teng et al. (1995); Lacity & Hirschheim 1993); Grant (1991)	RG1:The performance of existing internal resources cannot meet the expected level of quality
		GR2: Our firm does not have sufficient resource and capabilities for current coding needs.
		RG3: The existing internal resources for coding are perceived to be less effective.
		RG4: The existing internal resources for coding are perceived to be less efficient.
		RG5: The existing internal resources for coding are perceived to be technically incompetent.
Resource Complementarity	Espino-Rodríguez & Gil-Padilla (2005); Watjatrakul (2005); Barney (1991)	RC1: The acquired online resources from this site are good complements for our company.
		RC2: Our firm uses this site to look for complementary resources
		RC3: Our firm goes to online sourcing platforms like RentACoder to look for non-strategic resources
		RC4: The existence of online sourcing will allow our firm to focus on the core competence and activities.
Resource Utilization	Schwarz et al (2009)	RU1: It is easy for our firm to acquire the needed resources through this site.
		RU2: It is quick for our firm to find the required resources in this site.
		RU3: External resources acquired via this site can be used by our firm efficiently.
		RU4: External resources acquired via this site can be used by our firm effectively.

Table 6-2: continued

Task Environment	Schwarz et al (2009); Specht (1993); Horn (2002)	TE1: This site has critical resources that our firm doesn't have.
		TE2: This site has scarce resources that our firm doesn't have.
		TE3: There are enough competent providers available on this site.
		TE4: This site provides our firm good way to get access into the needed resources.
		TE5: This site provides a stable environment for our firm to acquire external resources.
Resource Suitability	Schwarz et al (2009)	RS1: This site provides us a good way to communicate with our external providers.
		RS2: This site provides us a good way to collaborate with our outside providers.
		RS3: Our online providers are always ready for communication and coordination whenever our company has a need.
		RS4: We can effectively communicate and coordination with online providers by using the existing IT infrastructures.
Knowledge Gap	Baldwing et al. (2001); Gupta & Gupta (1992); Jurison (1995); Lacity et al. (1994)	KG1: Our company does not have the sufficient required knowledge in house for coding.
		KG2: The required knowledge for coding is too complex for our company.
		KG3: It is hard and time consuming to hire the experts for coding for our company.
		KG4: The performance of internal technique staffs cannot meet the desired level of quality for coding.
		KG5: The performance of existing technical staffs is under expectations.
Knowledge Availability	Ågerfalk & Fitzgerald (2008); Horn (2002)	KA1: There is a large pool of qualified and competent experts in this site.
		KA2： There are many diversified experts in this site.
		KA3: This can satisfy the knowledge need of our firm in a broad way.
		KA4: This site provides our firm an easy way to recruit skilled people.

Table 6-3: continued

Knowledge Risks	Schwarz et al. (2009); Jayatilaka et al. (2003); Shi (2007); Balaji & Ahuja 2005	KR1: We worry about the inside knowledge of our company is exposed via this site.
		KR2: We feel risky to share my company's routing, policy, or ideas with external providers via this site.
		KR3: The intellectual property is not under good protected by using this site.
		KR4: I am worried about the loss of key knowledge abilities by relying on external providers.
		KR5: I worry about the knowledge integration problems between my firm and external providers.
Trust in platform	McKnight et al (2002a,b)	TIP1: When there is a need for external resources, we feel comfortable depending on the information provided by this site.
		TIP2: When there is a need for external resources, we feel comfortable depending on the services provided by this site.
		TIP3: We can always depend on this site as a reliable sourcing option for our company.
		TIP4: We feel that I could count on this site to help with a sourcing problem for my company.
		TIP5: Faced with a difficult problem, we can always use online platforms like this site.
		TIP6: If our firm had a challenging internal problem, we want to use this site again.
Trust in service providers	McKnight et al (2002a,cibtb)	TISP1: Generally I would feel comfortable depending on the external online service providers.
		TISP2: I can always rely on the external online service providers to fulfill our service needs.
		TISP3: I feel that I could count on the external online service providers to help with a sourcing problem for my company.
		TISP4: If I had a challenging internal problem, I would want to use online service providers again.
Intention to Engage	Goo et al. 2009	TIC1: We will consider to using this site for future outsourcing needs.
		TIC2: We want to remain a customer to this online sourcing site because we genuinely enjoy our relationship with them.
		TIC3: The continuation of a relationship with this site is very important to us.
		TIC4: We are willing to put more effort and investment in building our business relationship with this site.

Table 6-4: Qualitative content analysis results for New Items

Construct	Items/Subject	Times mentioned by firms				
		vWorker (19)	Elance (12)	Guru (3)	Odesk (9)	Sum (43)
Resource Complementarity	RC1	1	4	0	5	10
	RC2	3	5	2	6	16
	RC3	2	1	0	1	4
	RC4	2	3	1	2	7
Resource Utilization	RU1	1	0	1	3	5
	RU2	7	3	1	4	15
	RU3	6	4	1	4	15
	RU4	6	2	1	4	13
Task Environment	TE1	0	1	0	0	1
	TE2	0	1	0	0	1
	TE3	3	2	2	0	7
	TE4	2	0	1	0	3
	TE5	6	0	2	6	14
Resource Suitability	RS1	1	0	1	1	3
	RS2	1	0	0	1	2
	RS3	0	0	2	2	4
	RS4	0	0	1	1	2
Knowledge Gap	KG1	2	2	2	2	8
	KG2	1	0	0	0	1
	KG3	1	0	0	4	5
	KG4	1	0	0	0	1
	KG5	1	0	0	0	1
Knowledge Availability	KA1	2	2	1	5	10
	KA2	1	2	1	2	6
	KA3	0	4	2	3	9
	KA4	1	0	0	5	6
Knowledge Risks	KR1	0	0	0	0	0
	KR2	0	0	0	0	0
	KR3	0	0	0	0	0
	KR4	0	0	0	0	0
	KR5	0	0	0	0	0

Bearing this in mind, we administrated our data collection with the facilitation of one of the major OSPs providers – vWorker.com. A research invitation message, which contained a short statement of the study and a link to an online survey instrument, was broadcast over the website of vWorker.com. To increase the response rate, participants were offered financial incentives of several raffle prizes and a report that summarized the result of the study. The research participants are assured that the results would only be reported in aggregate for the protection of their privacy and confidentiality.

The survey was conducted between August 2010 and November 2010. A total of 241 valid responses were obtained in the end. Demographic information about the respondents and firms is summarized in Table 6-3, which shows that:

- 53% of respondents are managers or IT related staffs
- 78% percent of firms have employees less 50, which is consistent with that the major adopters of online sourcing are small firms and entrepreneurs.
- Firms are distributed in 51 countries, and 61% are from developed countries including United States, United Kingdom, Canada and Australian.
- 77% of the online sourcing projects are under $1000.

The average tenure in current firms and average outsourcing experiences of respondents are, respectively, 5.4 years and 4.1 years, which confirms that they are knowledgeable to provide information about both their firms and online sourcing activities. Nonresponse bias was assessed by verifying that the distribution of the countries of responding firms is similar to that of firms reported by the website of VWorker.com.

Table 6-5: Demographic Information of Respondents and Firms (n = 241)

Table 6-3. Demographic Information of Respondents and Firms (n = 241)				
Characteristics	**Frequency**	**Percentage**	**Mean**	**Std. Dev.**
Title of Respondents				
Administrative	39	16.2%		
Analyst	12	5.0%		
Technician	18	7.5%		
First-level Supervisor	12	5.0%		
Middle Manager	17	7.1%		
Senior Manager	69	28.6%		
Other (Owner, Founder, Entrepreneur)	72	29.9%		
Not Mentioned	2	.8%		
Tenure in Current Firm (years)	-	-	5.4	.34
Outsourcing Involvement (years)	-	-	4.1	.23
No. of Employees				
< 50	187	77.6%		
50 - 500	20	8.3%		
> 500	19	7.9%		
Not Mentioned	15	6.2%		
Location of Firm				
United States	89	36.9%		
United Kingdom, Canada and Australia	58	24.1%		
India, Pakistan and Romania	25	10.4%		
Others 44 countries	63	26.1%		
Not Mentioned	6	2.5%		
Average Outsourcing Project Value (Dollars)				
< 200	77	32%		
200 – 1000	101	41.9%		
> 1000	40	16.6%		
Not Mentioned	23	9.5%		
Frequency of Use of OSP				
Several time a week	60	24.9%		
Once a week	15	6.2%		
Several time a month	43	17.8%		
Once a month	29	12.0%		
Less than once a month	89	36.9%		
Not Mentioned	5	2.1%		

CHAPTER 7. DATA ANALYSIS AND RESULTS

We use partial least square (PLS) method for measurement model validation and structural model testing. PLS is a component-based approach that combines factor analysis with linear regressions (Gefen et al., 2000; Chin, 1998). PLS is more suited for predictive applications and theory building in contrast to covariance-based SEM (Gefen et al., 2000) and the former places the minimal restrictions on sample size, multivariate distributions and residual distributions. Furthermore, PLS is more appropriate for testing complex relationships by avoiding inadmissible solutions and factor indeterminacy (Fornell & Bookstein, 1982). As we know, this study is the first attempt to examine the theoretical interrelations within an integrative framework in terms of online sourcing context. Therefore, considering the exploratory nature, the presence of a large number of variables and complex relationships of current study, PLS is appropriate and well-suited for this study. SmartPLS2.0 (Ringle et al., 2005) – one of the PLS software packages – is used for the data analysis in this study.

For accurate estimation and enough statistical power, minimum sample size check is performed (Chin, 1998). A strong rule of thumb suggests that the sample size should be equal to the larger of the following: (1) ten times the scale with the largest number of formative indicators, or (2) ten times the largest number of structural paths directed at a particular construct in the structural model (Chin, 1998). The largest number of structural paths for a particular construct in our research model is 8. The sample size for current study is 241, which exceeds the minimum demand of sample size according to the rule of thumb (10*8 = 80). Therefore, our sample size is adequate for scale measurement and model testing. Next we will discuss the results of measurement and structural model with the use of PLS.

7.1 Measurement Model

7.1.1 Model Refinement and Assessment

Measurement model refinement and assessment are conducted via the component analysis part of PLS. We first refine the measurement model by deleting the items with low loadings and cross loadings. Finally 47 items, shown in Table 7-1, for the 12 principal constructs of the model were retained. Most interestingly, most of those problematic items identified in the qualitative analysis of items in scale development phase, such as TE1, TE2 and RC3, have been deleted via the item refining analysis. This pattern can be observed by comprising the result of qualitative analysis of items in Table 5 and the result of quantitative analysis of items in Table 7-1.

Next we assess the measurement model by examining internal consistency reliability, convergent and discriminant validity of the constructs. The internal consistency reliability is verified with that all composite reliability scores and Cronbach's Alpha of the latent variables shown in Table 7-1 exceeded the 0.70 threshold. Convergent validity means the extent to which the measures for a variable act as if they are measuring the underlying theoretical construct because they share variance (Schwab, 1980). Therefore, convergent validity can be established by examining the item loadings, composite reliability[4], Cronbach's Alpha, and average variance extracted (AVE) (Gefen et al., 2000). Generally the AVE score should be above .50, indicating that the latent variable can capture much higher construct-related variance than error variance. Collectively, the results of reliability, AVE, and item loadings (all above 0.70) of the latent variables in Table 7-1 provide strong evidence for the convergent validity of the measures.

[4] The composite reliability score is: $(\sum \lambda_i)^2/[(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)]$, where λ_i is the indicator loading, and $Var(\varepsilon_i) = 1 - {\lambda_i}^2$

Next we assess the discriminant validity of the measurement model. Discriminant validity means the degree to which measures of two constructs are empirically distinct. As shown in Table 7-2, the square root of AVE for each construct (diagonal term) exceed the correlations between the construct and other constructs (off-diagonal terms). A further examination of the item loading patterns shows that all items loaded on their respective constructs and much higher than all cross loadings, which also indicates the distinctions among constructs. Hence, discriminant validity of the instrument is established.

7.1.2 Common Method Variance Analysis

We also assess the effect of common method variance (CMV) in this study. The research subjects of this study are widely distributed and hard to reach, thereby, it is difficult and costly to administrate data collection via multiple methods and sources. Thus, a single data collection method – online questionnaire instrument– is used in this study. The use of single survey instrument and all self-reported data will cause the common method bias resulting from multiple sources such as the common rater effects and the measurement context effects (Podsakoff et al., 2003). CMV is one of main sources of systematic measurement error and can have a serious confounding influence on empirical results, yielding potentially misleading conclusions (Campbell & Fiske, 1959).

We took several procedures to reduce the effects of CMV. First the scales used in data collection have been validated via a secondary qualitative data acquired from several major OSPs. Second, we followed the instrument design and data collection procedures suggested by Podsakoff et al. (2003). Particularly, following Podsakoff & Organ (1986), we asked the respondents to providing information regarding their organizations and online sourcing activities rather than based on their personal experience and feelings. In addition, we performed several

ad-hoc statistical analyses indicated by Podsakoff et al. (2003) to assess the severity of common method variance.

First, we ran the marker variable test suggested by Lindell and Whitney's (2001). A marker variable is a variable that is not be theoretically related to at least one other variable included in the study, thereby, it can be used as a marker in that any observed relationships between it and any of the other variables can be assumed to be due to common method variance (Podsakoff et al., 2003). One of the control variables – Ease of Use, has been considered as an ideal marker variable, because it is theoretically unrelated to at least one other constructs in current study, including Cost Reduction, Resource Gap, Knowledge Gap, Knowledge Risks and Perceived Transaction Uncertainty. Then high correlations between these constructs and Ease of Use should indicate CMV because the construct of Ease of Use should be weakly related to them (Pavlou et al., 2007). Since the average correlation among Ease of Use and these constructs is r = .05 (average p-value = 0.67), there is minimal evidence of CMV.

Second, Harman's one-factor test is also performed by including all items in an explorative principal components factor analysis (Podsakoff et al., 2003). Evidence for CMV exists when one factor accounts for most of the covariance. The one factor extracted from all items accounts about 32% of total variance, which should not be considered as a big concern considering that most of the constructs were assumed to be theoretical interrelated (Cheon, et al., 1995). Actually one big problem of Harman's one-factor is that the general factor may reflect not only CMV but also true variance due to causal relationships between the constructs (Podsakoff et al., 2003).

Finally, following Liang et al. (2007) and Podsakoff et al. (2003), we included in the PLS model a common method construct whose indicators included all the indicators the principal

constructs. The detailed analytical steps are described in Appendix E. Finally each indicator's variances substantively explained by the principal constructs and by the common method construct were calculated. As shown in Appendix D, the average substantively explained variance of the indicators by the principal construct is .731, while the average method based variance is .007. The ratio of substantive variance to method variance is about 98:1. Further examinations on the variance explained for the dependent variables and the structural path coefficients show no significant differences before and after the inclusion of the common method construct. Given the small magnitude and insignificance of CMV based on statistical analyses above, we contend that the method is unlikely to be a serious concern for this study.

7.2 Structural Model

The results of testing the structural model, including the standardized path coefficients, the statistical significance of the path coefficients and R squares, are shown in Figure 7-1. The t-values for the path coefficients are estimated via the bootstrapping procedure with resampling of 500 subsamples (Chin, 1998).

As shown in Figure 7-1, cost reduction in the model contributes positively and significantly to both resource gap ($\beta = 0.12$, $P < 0.10$) and knowledge gap ($\beta = 0.15$, $P < 0.01$) within an organization, supporting hypotheses 1a and 1b. Cost reduction also has significant and positive effects on the task environment ($\beta = 0.45$, $P < 0.001$) and the other characteristics of an OSP, including resource utilization ($\beta = 0.21$, $P < 0.001$), resource complementarity ($\beta = 0.40$, $P < 0.001$), resource suitability ($\beta = 0.20$, $P < 0.01$) and knowledge availability ($\beta = 0.25$, $P < 0.001$). Hence, the hypotheses 2 and 3 are supported.

Table 7-1: The Assessment of Measurement Model for Principle Constructs

Constructs	# of Items	Composite Reliability	Cronbach's Alpha	AVE	Loadings
Cost Reduction	3	0.87	0.78	0.69	CR1 (0.80) CR2 (0.86) CR3 (0.84)
Resource Gap	3	0.90	0.83	0.75	RG3 (0.89) RG4 (0.88) RG5 (0.83)
Resource Complementarity	3	0.89	0.82	0.74	RC1 (0.88) RC2 (0.85) RC4 (0.85)
Resource Utilization	4	0.94	0.92	0.81	RU1 (0.91) RU2 (0.88) RU3 (0.90) RU4 (0.90)
Task Environment	3	0.90	0.83	0.75	TE3 (0.81) TE4 (0.92) TE5 (0.87)
Resource Suitability	4	0.89	0.84	0.67	RS1 (0.85) RS2 (0.85) RS3 (0.82) RS4 (0.75)
Knowledge Gap	5	0.92	0.89	0.71	KG1 (0.88) KG2 (0.91) KG3 (0.70) KG4 (0.90) KG5 (0.79)
Knowledge Availability	4	0.91	0.88	0.73	KA1 (0.86) KA2 (0.83) KA3 (0.90) KA4 (0.83)
Knowledge Risks	4	0.90	0.86	0.70	KR2 (0.81) KR3 (0.85) KR4 (0.84) KR5 (0.86)
Trust in platform	6	0.92	0.90	0.70	TIP1 (0.82) TIP2 (0.87) TIP3 (0.82) TIP4 (0.78) TIP5 (0.82) TIP6 (0.80)
Trust in service providers	4	0.91	0.87	0.72	TISP1 (0.85) TISP2 (0.84) TISP3 (0.87) TISP4 (0.82)
Intention To Engage	4	0.94	0.92	0.81	ITE1 (0.88) ITE2 (0.92) ITE3 (0.92) ITE4 (0.87)
Note: The composite reliability scores were calculated with the formula prescribed by Fornell & Larcker (1981). And all item loadings are significant at 0.01.					

Table 7-2: Correlations of Latent Variables and Evidence of Discriminant Validity

	CR	RG	RC	RU	TE	RS	KG	KA	KR	TIP	TISP	ITE
CR	**0.83**											
RG	0.11	**0.87**										
RC	0.58	0.07	**0.86**									
RU	0.52	-0.03	0.64	**0.90**								
TE	0.47	0.05	0.59	0.75	**0.87**							
RS	0.42	0.03	0.36	0.53	0.57	**0.82**						
KG	0.22	0.60	0.12	0.09	0.18	0.18	**0.84**					
KA	0.49	-0.01	0.52	0.64	0.63	0.60	0.10	**0.85**				
KR	-0.08	0.22	-0.21	-0.13	-0.13	-0.15	0.16	-0.17	**0.84**			
TIP	0.45	0.02	0.57	0.67	0.70	0.64	0.18	0.70	-0.22	**0.84**		
TISP	0.40	0.08	0.46	0.55	0.55	0.51	0.27	0.55	-0.13	0.75	**0.85**	
ITE	0.46	0.04	0.58	0.65	0.64	0.54	0.21	0.63	-0.12	0.75	0.62	**0.90**

Note: Bolded diagonal elements are the square root of average variance extracted (AVE). These values should exceed inter-construct correlations (off-diagonal elements) for adequate discriminant validity.

Inside an organization, resource gap has a significant effect on knowledge gap ($\beta = 0.58$, $P < 0.001$), supporting hypothesis H4. For the two types of gaps within an organization, only resource gap is found to contribute significantly to task environment ($\beta = 0.13$, $P < 0.10$), while resource gap has no significant impact on task environment ($\beta = - 0.08$, $P > 0.10$). Therefore, H5a is rejected but H5b is supported.

In terms of an OSP, task environment contributes significantly and positively on the perceptions of firms towards the other characteristics of the marketplace, respectively, resource utilization ($\beta = 0.65$, $P < 0.001$), resource complementarity ($\beta = 0.40$, $P < 0.001$), resource suitability ($\beta = 0.47$, $P < 0.01$) and knowledge availability ($\beta = 0.51$, $P < 0.001$), supporting H6. Task environment also has a significant effect on trust in platform ($\beta = 0.23$, $P < 0.05$), supporting H7. Three of other OSP characteristics are found to have significant influences on trust in platform, and they are respectively, resource complementarity ($\beta = 0.14$, $P < 0.01$), resource suitability ($\beta = 0.24$, $P < 0.001$) and knowledge availability ($\beta = 0.26$, $P < 0.001$), supporting H8b, H8c and H8d. However, resource utilization has no significant effect on trust in platform, thereby, H8a is not supported. Collectively task environment and the other four characteristics of an OSP account for 65 percent of the variance explained on trust in platform.

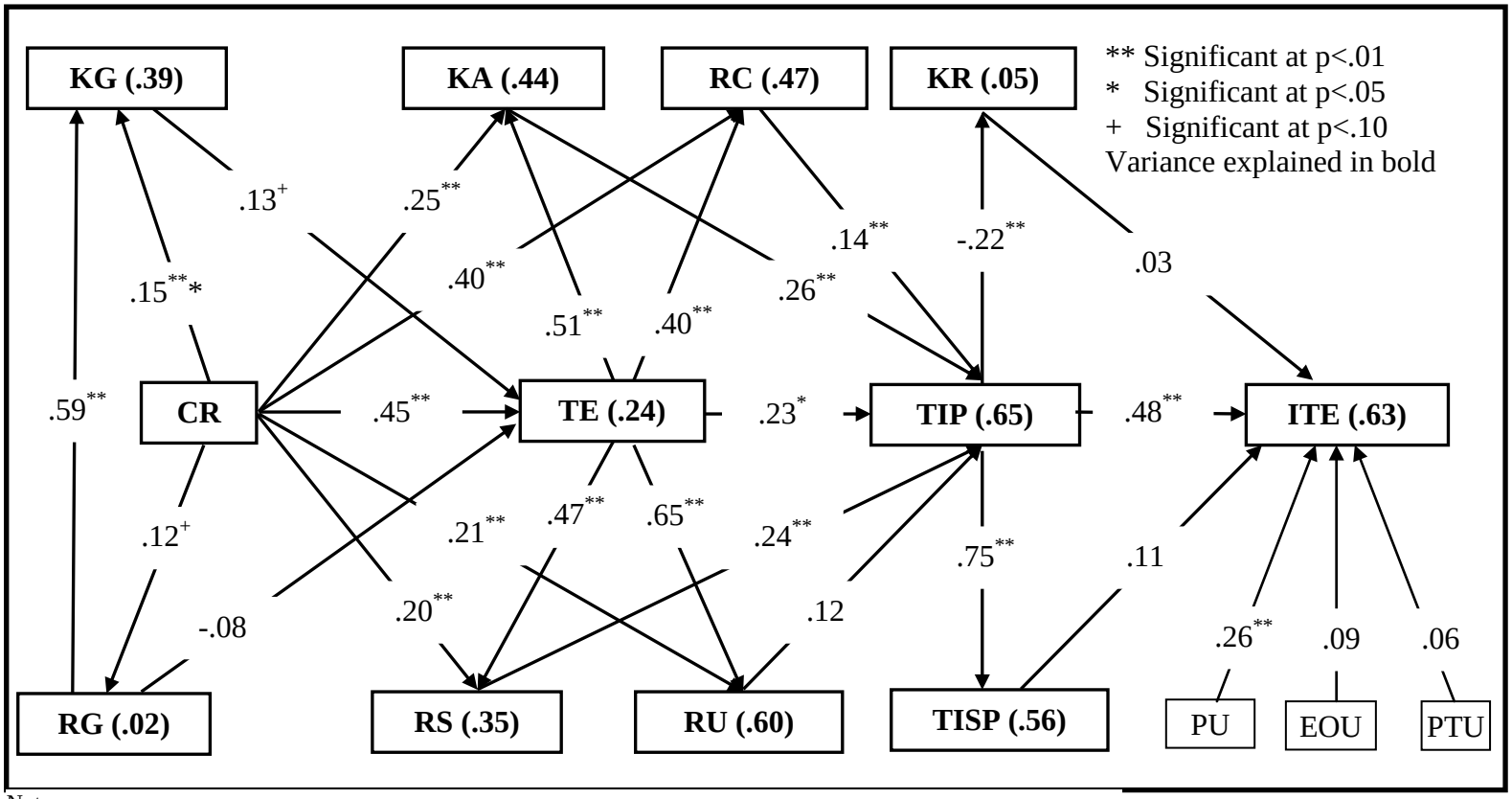
As hypothesized, trust in platform contributes significantly and positively to trust in service providers ($\beta = 0.75$, $P < 0.001$), and significantly and negatively to knowledge risks ($\beta = - 0.24$, $P < 0.01$). Thus, both H9 and H10 are supported.

Finally, intentions to engage online sourcing relationship with an OSP is found to be significantly influenced by trust in platform ($\beta = 0.48$, $P < 0.001$), supporting H11. However, no evidences show that intentions to engage is significantly influenced by either trust in service providers ($\beta = 0.11$, $P > 0.10$) or knowledge risks ($\beta = 0.03$, $P < 0.10$). Therefore, both H12 and

H13 are rejected. We also add three control variables (perceived usefulness, ease of use, and perceived transaction uncertainty) to intentions to engage, and only perceived usefulness has a significant effect ($\beta = 0.26$, $P < 0.01$). Controlling for effects of these control variables, the variance explained on intentions to engage to engage online sourcing is about 58 percent.

We also tested a competing model in which the four characteristics of OSP (resource utilization is deleted because of its insignificant path) were directly linked to intentions to engage following Baron and Kenny's (1986) formal test for mediation, as shown in Figure 7-2. Despite all being initially significant (when trust in platform was excluded from the PLS model), three characteristics became insignificant (except resource complementarity) when trust in platform was included as an independent variable in the model, indicating that trust in platform fully mediates the impacts of these three characteristics of OSP (task environment, resource suitability, and knowledge availability) on intentions to engage online sourcing. The path of resource complementarity is significant with or without trust in platform, suggesting that the effect of resource complementarity on intentions to engage is only partially mediated by trust in platform. Therefore, resource complementary contributes not only to trust in platform, but also to intentions to engage directly, which makes it a special characteristic in contrast with other characteristic of an OSP.

The results for hypotheses testing are also summarized in Table 7-3. Next we turn to discuss the implications and findings based on these results.



Note:
1. CR - Cost Reduction, GP - Resource Gap, KG - Knowledge Gap, RC - Resource Complementarity, RU - Resource Utilization ,TE -Task Environment , RS - Resource Suitability, KA - Knowledge Availability, KR - Knowledge Risk, TIP - Trust in Platform, TISP -Trust In Service Provider, ITE – Intention To Engage
2. Contol variables: PU - Perceived Usefulness, EOU - Ease of Use, PTU - Perceived Transaction Uncertainty

Figure 7-1: PLS Results of Structural Model

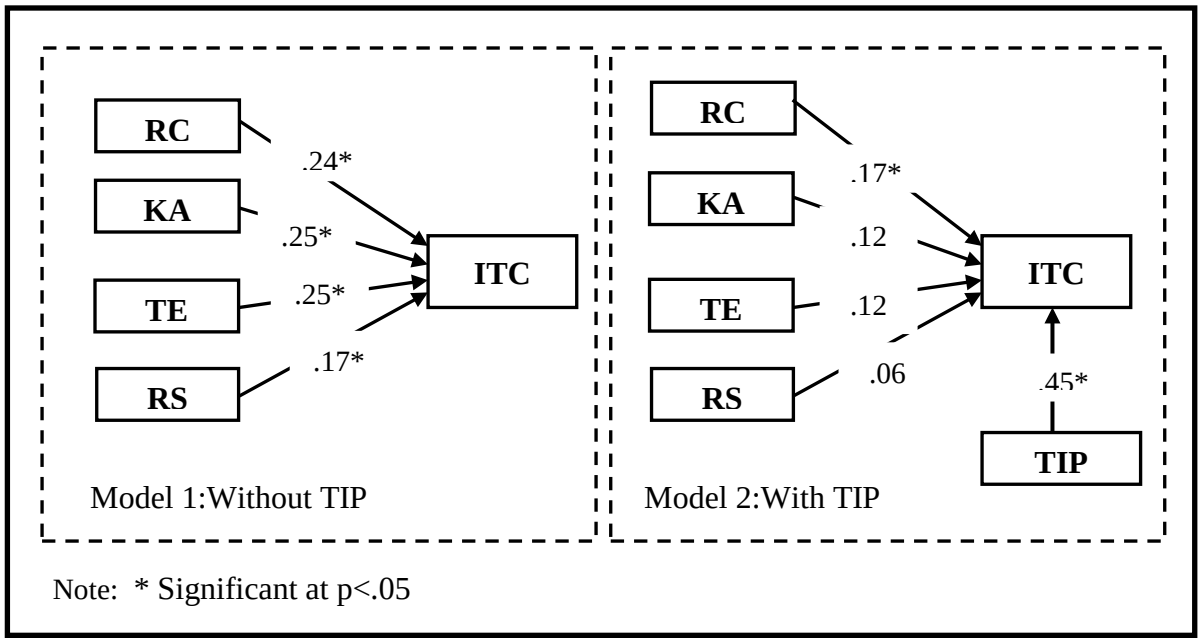


Figure 7-2: The Competing Model

Table 7-3: Summary of Structural Path and Hypothesis Test

Table 7-3: Summary of Structural Path and Hypothesis Test				
Perspective	Structural Path	Hypothesis	Path Coefficient	Support?
Organizational	CR->RG	H1a	.12+	Yes
	CR->KG	H1b	.15**	Yes
	CR->TE	H2	.45**	Yes
	CR->RU	H3a	21**	Yes
	CR->RC	H3b	40**	Yes
	CR->RS	H3c	.20**	Yes
	CR->KA	H3d	.25**	Yes
	RG->KG	H4	.58**	Yes
	RG->TE	H5a	-.08	No
	KG->TE	H5b	.15**	Yes
Marketplace	TE->RU	H6a	.65**	Yes
	TE->RC	H6b	.40**	Yes
	TE->RS	H6c	.47**	Yes
	TE->KA	H6d	51**	Yes
	TE->TIP	H7	.23*	Yes
	RU->TIP	H8a	.12	No
	RC->TIP	H8b	.14**	Yes
	RS->TIP	H8c	.24**	Yes
	KA->TIP	H8d	.26**	Yes
Relational	TIP-> TISP	H9	.75**	Yes
	TIP-> KR	H10	-.22**	Yes
	TIP->ITE	H11	.48**	Yes
	TISP ->ITE	H12	.11	No
Marketplace	KR ->ITE	H13	.03	No
**Significant at p < .01; *Significant at p < .05; +Significant at p < .10.				

CHAPTER 8. DISCUSSIONS

8.1 Key Findings

This study has several key findings that are discussed below.

First, the results confirm the important role of *trust in platform* in online sourcing. *Trust in platform* not only has a significant positive impact on *intentions to engage online sourcing*, but also significantly reduces the negative perception of online sourcing – knowledge risks. Controlling the effects of other variables, *trust in platform* alone accounts for about 57% of variance explained on intentions to engage online sourcing. Furthermore, *trust in platform* can be transferred to *trust in service providers*, validating the study's proposition that the institutional-level trust can enhance the individual-level trust. Unlike the traditional outsourcing relationship in which a service client and its service provider can develop a high level of embeddedness (Lee et al., 2004; Uzzi, 1997), it is hard to develop the same level of social embeddedness under online context due to the absence of relational norms, social interactions and social cues (Gefen, 2000). Thus, in online sourcing, the role of individual-level trust in the relational governance (Goo et al., 2009; Zaheer & Venkatraman, 1995) of outsourcing relationship is replaced by institutional-level trust. *Trust in platform*, reflecting the collectivity of trust in the community of online service providers, underwrites the dyadic individual-level trust (Durkheim, 1964) between a service client and its service providers. Without trust in platform, the trust towards an online service provider who may be new, unknown or from different social and cultural backgrounds will not exist. Overall, trust in an OSP, as the foundation of the relational governance (Goo et al., 2009; Zaheer & Venkatraman, 1995) of online sourcing relationships, provides the necessary social and psychological conditions for online sourcing activities, overcome transaction problems and negative perceptions, and finally enable the adoption of online sourcing.

Second, this study indicates that *knowledge risks* does not have a significant negative effect on intention to engage in online sourcing by firms, rejecting the proposition that knowledge risks impedes online sourcing engagement. The finding contradicts with the negative role of knowledge risks suggested in most of the previous outsourcing literature (e.g. Schwarz et al., 2009; Jayatilaka et al., 2003). For instance, Schwarz et al., (2009) indicated knowledge risks as one of the key drivers of outsourcing decision for ASP and offshoring. A few reasonable interpretations are suggested here. First, firms often divide a big and complex project into many small projects for online sourcing. Thus, a service provider only affords a small part of the whole project, and thereby, can only access the limited information and knowledge of the firm. Thus, the risks that organization-specific knowledge is to be disclosed by the vendor are well controlled. Second, according to resource-based theory, firms often utilize online sourcing to look for complementary and non-strategic resources and capabilities. Generally very little organizational-specific knowledge resides in the complementary resources and processes of firms, therefore, knowledge risks become negligible for online sourcing. Third and finally, several marketplace mechanisms and safeguards (Pavlou & Dimoka, 2006) are in place to protect the firm from unauthorized access and disclosure, such as, non-disclosure agreement, online feedback systems, and rating systems. Therefore, the results indicate that firms are not necessarily hesitant to outsource projects or applications to unknown online service providers, provided that appropriate safeguards are in place in online sourcing context.

Third, the results suggest the sources in which *trust in platform* roots. Barring resource utilization, the other four characteristics of OSP, including task environment, resource complementarity, resource suitability and knowledge availability, contribute significantly and positively to trust in platform. Thus, the trust of firms towards an OSP relies upon the general

task environment of the marketplace, the knowledge available from the marketplace, the availability of communication and coordination channels, and the nature of the external resources to complement the existing resources of the firm. Furthermore, this study confirms the mediating role of trust in platform in online sourcing decision making. Trust in platform fully mediates three characteristics of OSP, respectively, task environment, resource suitability and knowledge availability, and partially mediates resource complementarity. Thus, online sourcing engagement is determined by trust in platform and resource complementarity. As a result, our study suggests the relevance of a relational perspective (Goo et al., 2009; Poppo & Zenger, 2002; Lee & Kim, 1999; Sabherwal 1999), specifically trust between firms and marketplace, in understanding the online sourcing decision.

Fourth, our findings suggest the vital role of *task environment,* a decision attribute based on resource-dependency theory, among all the characteristics of OSP. Task environment, reflecting the overall ability of an OSP to offer resources, knowledge, and capabilities, contributes significantly to all the other four decision attributes of platform based on theories, including, resource utilization, resource complementarity, knowledge availability, and resource suitability. Therefore, this study indicates a significant role of resource-dependency theory in understanding online sourcing decision making from an external perspective: it lead to all other theory-based decision attributes associated with an OSP. Finally, all these marketplace decision attributes collectively shape one of key elements of the relational governance among firms, marketplace and providers – trust.

Fifth, our study indicates that *cost reduction*, a TCT based decision attribute, plays the most significant role in online sourcing decision making. Cost reduction has significant effects on the two decision attributes associated with the organizational perspective (resource gap and

knowledge gap), moreover, it contributes significantly to all the five external decision attributes associated with marketplace (task environment, resource utilization, resource complementarity, resource suitability and knowledge availability). Thus, cost considerations or strategies to reduce cost not only cause the gaps in terms of both resources and knowledge inside firms, but also shape the perceptions towards the external marketplace. As a result, our findings indicate that cost considerations might be the original and fundamental factor for online sourcing decision. This finding confirms the role of cost considerations indicated in previous literature (e.g., Ang & Straub, 1998; Schwarz et al., 2009; Grover et al., 1994a) and indicates the relevance of TCT perspective on outsourcing decision.

Sixth, our study suggests the decision making process of online sourcing within an integrative theoretical framework from a descriptive perspective. The decision to engage online sourcing can be assessed from three steps, respectively, organizational analysis, marketplace analysis and relational analysis. Based TCT, RBT and KBV, organization analysis contains the attribute of cost reduction, resource gap and knowledge gap, shedding light on the inside perspective of firm. Marketplace analysis is based on RDT, RBT and KBV, including the attributes of task environment, resource utilization, resource complementarity, resource suitability, knowledge availability and knowledge risks. Finally, the engagement of online sourcing is determined by one relational element– trust in platform, and the complementary nature of the resources online. The logic might be stated as below:

> Firms, especially the small firms and entrepreneurs, are under heavy pressures for cost cutting. Cost reduction strategy helps firms to increase the competitive force, keep competitive advantages, and maintain the strategic flexibility. However, cost reduction strategy also creates both resource gap and knowledge gap inside of firm. To fill those

gaps, firms turn to the external marketplace for the acquisition of reliable and cheap resources. Firms might refer to different perspectives of firms, including RDT, RBT and KBT, for the decision attributes of an external marketplace. The assessment of these decision attributes, which are shaped by the cost reduction strategy of firms because strategy, influence the trust intentions of firms to an online sourcing platform. Finally the decision to engage online sourcing is determined by the trust toward the OSP and if complementary resources or knowledge can be found in the marketplace.

Seventh and finally, this study indicate integrative framework of online sourcing decision and discloses the interrelations among different theoretical perspectives as indicated by Cheon et al. (1995). Most of decision attributes (except knowledge risk, resource gap, and resource utilization) play significant role in online sourcing decision making, indicating that each theory provides some insights for the understanding of online sourcing phenomenon. However, no one single theory alone provides full interpretations on online sourcing decision. Among these decision attributes, Cost Reduction and Task Environment are particular important, accounting most of variances of their responding variables. Thus the vital roles of TCT and RDT in understanding online sourcing decision are suggested here.

8.2 Contributions to Theory

The study's primary contribution is to apply a comprehensive theoretical framework for the understanding of online sourcing decision making based on previous outsourcing research (e.g., Cheon et al., 1995; Schwarz et al., 2009). Although TCT and RDT stand out to play the most important roles, no single theoretical lenses can shed a full light on the understanding of online sourcing engagement. Thus, outsourcing decision making under online context can only be fully understood from multiple theoretical perspectives. By doing this, we not only extend the

outsourcing decision research to a new outsourcing phenomenon – online sourcing, but fit the study into the tradition of outsourcing research. Therefore, the study helps to build strong knowledge cumulative to outsourcing literature with the application of integrative research framework to a new research context.

The second contribution of this study is that it proposed and tested the interrelations among different theoretical perspectives within an integrative model, confirming the argument of Cheon et al. (1995) that different theories do not conflict with each other and various theoretical concepts are inherently interrelated. Totally, nine decision attributes based on four theoretical lenses of firm (Schwarz et al., 2009; Jayatilaka et al. 2003) were developed and measured in the context online sourcing. These theoretical attributes are widely interrelated as depicted in the research model under current research context. Thus, the development of these theoretical constructs, which can be examined, measured, and validated in other context of outsourcing, provides a good basis for future research.

Third, this study contributes to outsourcing research by illustrating the relative impacts of theories on online sourcing decision. The TCT based construct, cost reduction, plays a significant role that leads to both organizational and marketplace attributes, indicating the cost and strategic considerations for firms to outsource through online sourcing. The RDT based construct, task environment, stands out among the attributes of an online marketplace, suggesting the relevance of RDT perspective in online sourcing. Thus, at the theory level, our findings indicate the relative importance of TCT and RDT.

Our findings also show that the RBT-based constructs and the KBV-based constructs are closely interrelated. For instance, it is hard to determine that a gap occurred inside a firm is associated with resources or with knowledge. And the providers available from an online

marketplace might be viewed as the resources or as the experts in the minds of the executives. However, we argue that a KBV perspective is more relevant than a RBT view for online sourcing because that: 1) IT services and even other kinds of services outsourced via online sourcing are extensively knowledge-based (Jayatilaka et al. 2003; Schwarz, 2009); 2) an OSP is often viewed as a global community of the talented (Gefen & Carmel, 2008); and 3) knowledge is often treated as a special resource of firms according to Grant (1991), and thereby, KBR perspective is able to largely reflect RBT perspective. Our observations on RBT and KBV are in accordance with the call for the KBV on outsourcing research recently (Zack, 2010) and the call for the shift of research focus from RBT to KBV in the domain of IS research (Schwarz et al., 2009).

As a result, this study suggests the impacts of three theoretical perspectives for online sourcing: the most relevant theories are TCT and RDT, and next KBV, and the impact of RBT is the weakest. By comparing with previous literature, we have a few implications on outsourcing theory.

- This observation on RBT contradicts with the call to increase attention on RBT perspective of firms with IS community (Wade & Hulland, 2004), indicating that this call may not necessarily reflect the nature of IS decision-making (Schwarz et al., 2009).
- The observations on TCT, KBV, and RBT are in consistence with the study of Schwarz et al. (2009), in which they also suggested that TCT and KBV were the strongest but RBT were not considered especially relevant. The findings also confirmed the important role of TCT perspective in previous outsourcing literature (e.g. Ang & Straub 1998; Lacity & Willcocks 1995; Ang & Cummings, 1997) and the call for increasing attention on KBV in outsourcing research.

- Our findings also suggest the importance of RDT, whereas it was indicated insignificant in the study of Schwarz et al. (2009). Here are the explanations for this discrepancy:
    1) While the munificent environment was the primary focus with the perspective of RDT in Schwarz et al. (2009), in this study, we not only included the attribute of resource munificence, but also considered the role of the marketplace in providing a reliable and safeguarding transaction context.
    2) Online transactions are often impeded by negative perceptions including risk, insecurity and uncertainty (McKnight et al., 2002a), thereby, the governance tools on online sourcing transactions, such as, conflict resolution and comment system, should be in place rather than just the abundant resources.

Fourth, from a descriptive perspective, this study describes the process of online sourcing decision making and indicates the decision attributes for consideration in each process. Cost consideration seems to be the most original and strategic motivation that drives firms to engage online sourcing. Once firms begin to considering outsourcing, they will assess the attributes of an external marketplace. Their trust in outsourcing marketplace is established the assessment on those attributes. Finally the decision to acquire resources from an online marketplace is determined by the trust in platform to provide resources, capability and knowledge, as well as the ability to safeguard the resource acquisitions. Therefore, this study suggests that outsourcing decision is a complex process and that more attributes than just cost should be considered by executives.

Fifth, this study introduced and tested the mediating role of institutional-level trust in online sourcing decision making, and thereby, established the linkages between the traditional theoretical perspectives and the relational perspective of outsourcing (Goo et al., 2009; Poppo &

Zenger, 2002; Lee & Kim, 1999; Sabherwal, 1999). Particularly, we identified the primary sources of trust from the perspective of outsourcing based on theories. Previous studies (e.g. Koh et al., 2004; Lee & Kim, 1999; Ågerfalk & Fitzgerald, 2008) have indicated the importance of a good client-provider relationship for the success of outsourcing. The same apparently applies to online sourcing (Gefen et al., 2008). Especially, this study indicates that, in online context, the trust between firms and providers is rooted in the trust of firms in an OSP according to the trust transference logic (Stewart, 2003). Thus, a good online outsourcing relationship is first established on firms' relationship with the marketplace.

Furthermore, with the change of the nature of outsourcing in recent years from a small marketplace with a small number of key competitors to a global marketplace with a large quantity of small providers (Schwarz et al., 2009; Gefen & Carmel, 2008), powerful outsourcing governance tools become necessary for governing colligations and interactions among firms. Thus, our findings also indicate the governance role of an OSP played in governing the transactions, collaborations and interactions among firms and their providers, even in the virtual work context. As the transaction intermediary (Pavlou & Gefen, 2004) between firms and providers, an OSP provides the third-party institutions and Internet infrastructures, and thus, governs the online outsourcing transactions and activities.

Finally, the study extends the body of outsourcing literature to a new landscape of outsourcing – online sourcing. This new outsourcing practice is becoming more important "as the global marketplace dynamics seem to be moving toward greater diversification in sourcing and smaller, more manageable, contracts" (Gefen & Carmel, 2008). Thus, while most of previous studies leaded towards larger transactions that often occurred among big organizations (Gefen & Carmel, 2008), this study disclosed the stories about small IT outsourcing transaction

from the perspective of small firms and entrepreneurs (Obal 2009). By doing this, we introduce a new outsourcing perspective to previous outsourcing studies.

8.3 Implications for Practice

The study's findings have a few implications for practitioners, including firms, OSP vendors, and online service providers.

For firms, firstly, the findings confirm the existence of the online sourcing practices (Gefen & Carmel, 2008, Obal, 2009), which have already been exploited by early adopters, especially small firms and entrepreneurs. Moreover, our findings also indicate the potentiality of online sourcing as an efficient outsourcing option for large firms. It also offers firms more flexible options to recruit contract workers or form temporary teams globally. Secondly, the findings show that the negative perceptions including knowledge risks and perceived transaction uncertainty, which are generally perceived as the primary inhibitors for online purchasing (Pavlou & Gefen, 2004) or outsourcing (Schwarz et al., 2009), are not big concerns here for online sourcing adoptions. These negative perceptions are either well controlled via the division of complex projects or mitigated by the governance tools (e.g., arbitration service, escrow service) provided by the OSP. Although the findings need further validation, the study as least suggests that executives should not view knowledge risks as the major barrier for online sourcing. Thirdly, the findings indicate that cost reduction is still the primary focus of organizations and as the key driver for outsourcing decisions. The executives should bear cost considerations in mind when looking for external providers to fill an organization's IT need in case make wrong decisions. Fourth, the study suggests the significant impacts of task environment in online sourcing decision, thus, firms need to carefully assess the environment of an OSP before engaging a relationship with it. Finally, in comparison with other outsourcing options (e.g. ASP

and Offshoring), online sourcing are more suitable for small projects that are generally viewed as good complements to firms' current core activities. Therefore, online sourcing is more appropriate for firms that look for resources and knowledge that are complementary to their current resources and knowledge in nature. Moreover, firms should also make the outsourced projects more granular and manageable when using online sourcing.

The first implication for OSP vendors is that the results suggest the importance of the relationship between firms and an OSP for the engagement of online sourcing, particularly, trust in an OSP by firms playing a key role in online sourcing. Moreover, trust in OSP can also be transferred to the trust to the individual service providers on that marketplace. Therefore, to increase the involvement of firms in online sourcing, OSP vendors should dedicate to improve the relationships with firms. Our findings further indicate that good relationships (e.g. trust) with firms are established on the ability of an OSP to provide key resources and knowledge, the communication capabilities and infrastructures, and a reliable and safeguarding overarching transaction environment. Thus, OSP vendors should increase the capacity of platform by attracting more qualified providers, improving communication and coordination capabilities, and enacting rules and mechanisms for safeguarding transactions. Second, our findings indicate that the governance of outsourcing has been partly transferred from firms to OSP vendors in online sourcing context, whereas firms take in charge the governance role in traditional outsourcing. Most of outsourcing projects are generally very small, which means that a firm need to communicate and coordinate with many different distributed providers at the same time. Therefore, OSP providers should develop friendly and useful governance tools for firms and sometimes afford some governance functions, such as, conflict resolution, transaction facilitation, project management and etc. Third, our findings indicate that cost reduction and task

environment are the two most significant factors that driving online sourcing engagement, thus, OSP providers should highlight their advantages in these two factors when they develop relationships with new firms.

Finally, the studies also have several implications for online service providers. First, the findings indicate that KBV is more suitable than RBT for online sourcing. Firms use online sourcing primarily to look for skilled, experienced and talented people. Therefore, service providers that can better demonstrate the expertise, experiences, prior successful projects, and communication capabilities have a better chance to win a project. Second, knowledge sharing and transferring are particularly important to the success of an online sourcing project according to the KBV perspective. High quality of knowledge sharing and transferring is based on the communication and coordination processes between a firm and their providers. Thus, developing good communication and coordination skills are very important for service providers. Third, the study indicates that cost reduction is still the primary interest of firms to use online sourcing currently. However, cost is not the only determinant when a firm choosing a specific service provider. Skills, experiences, prior relationships and communication skills (e.g., language skills) are also important (Gefen & Carmel, 2008). Therefore, a service provider should make an appropriate bidding strategy by balance his/her skill sets, competitors' conditions, and the psychological level of price.

8.4 Limitations and Future Research Directions

Just like any other research, this study has a number of limitations, which are discussed below.

First, the study's findings are based upon a snapshot of the survey. There are two primary weaknesses for the utilization a snapshot of data: (1) key processual and contextual information was missed; and (2) strong causal relationships among the theoretical constructs cannot be argued. However, outsourcing decision making is a complex process in nature (Schwarz et al., 2009). Therefore, a longitudinal study or in-depth qualitative study (e.g., case study) is needed in future to overcome this limitation by exploring the processual and contextual factors in online sourcing decision.

Second, we have developed 9 theoretically derived decision attributes that we hypothesized are relevant for online sourcing decision. We grounded these 9 attribute in four organizational theories based on prior work (Schwarz et al., 2009; Cheon, et al., 1995) for three reasons: (1) we believe these four theories are relevant for the understandings of online sourcing, and (2) to fit this study with prior outsourcing work for knowledge accumulation and (3) to make comparisons with previous studies. However, we do recognize that other latent attributes grounded in other theories may have influence on outsourcing decisions. And we leave the opportunity for other researcher to explore in future.

Beside those mentioned above, the study also indicates a few more future research directions. First, this study has suggests that a knowledge-based view is more suitable for online sourcing. Future research can study online sourcing in depth by employing a KBV perspective of outsourcing, investigating the influences of the knowledge associated factors in online sourcing, such as, knowledge sharing and transferring, knowledge risks, communication and coordination,

and etc. The existence of online souring marketplace often provides a good opportunity for researchers who are interested with the virtual work and virtual team because almost all activities here occur in a virtual and distributed environment.

Second, this study also suggests the governance role of OSP in governing online sourcing activities. Schwarz et al. (2009) stated that: "the nature of outsourcing has changed … more emphasis should be placed on how these collaborations and interactions can be governed and on the importance of outsourcing governance tools". Therefore, future research can study what outsourcing governance tools that an OSP should provide to firms, how firms govern online sourcing activities with the facilitation of the OSP, and how firms and an OSP allocate their governance roles and functions.

Third, this study only examines one model of online sourcing practice – the marketplace model. However, the other online sourcing model, the community model, also deserves more academic attention in future. The community model is different from the marketplace model in nature. The former is more relying on the collective actions (Markus, 2007) of the providers (or community members) to complete a task or an IT project. Therefore, research interests can be placed on how collective actions of distributed individual providers are governed and coordinated for the accomplishment a complex IT project (Feller et al., 2008; Ågerfalk & Fitzgerald 2008) by both firms and online sourcing community providers. In addition, future research can also study the reasons why individual providers would like to participate with these community-based activities, which is also one of the topics in the OSS research literature.

Fourth, this study indicated that IT service as a kind of "commodity" that can be traded via an online marketplace. Thus, we illustrated one research area that has not been examined in traditional e-business research: service rather than the normal product like book or computer.

Then traditional e-business topics like e-trust and perceived uncertainty (Pavlou et al., 2007; McKnight et al., 2002a) can be examined in the new context of service exchanges. And the results and findings can be compared with previous studies.

Finally, this study only explored online sourcing from the firms' perspective, which is also the predominant perspective of current outsourcing research. Thus, more outsourcing research from the perspective of service providers is needed in future. So is it for online sourcing research.

8.5 Concluding Thought

Malone and Laubacher (1998) predicated "the dawn of e-lance economy" more than 10 years ago and now it finally seems to take shape. The service platforms that we discussed above have connected countless service providers from the globe to offer customized services to individuals, small organizations and even big corporations. The boundaries among traditional organizations, including the physical ones, cultural ones and interorganizational ones, have been broken down with the rise of these new online practices; and instead, new online boundaries intermediated by the web and the platform begin to emerge. The working practices have been moved from within an organization to a more open and virtual online platform in terms of online sourcing. Consequently, a new working relationship between workers and organizations becomes more significant: workers or providers are more attached to a specific platform than to a specific organization in the context of online sourcing. They establish profiles, find opportunities, build up working experiences and reputation, and maintain loose and temporary working relationships with multiple organizations via the online platforms. What would the business world and society be in future if the economy of online sourcing continues to proliferate? Obviously, the business and society will be fundamentally transformed, but how?

Hence, although we have look into the phenomenon of online sourcing mainly from the perspective of outsourcing in this dissertation, the broad implications and repercussions of online sourcing for business and society deserved to be mentioned and discussed here slightly. “The reason it’s so important for us to recognize and to challenge the biases of our existing mind-set is that the rise of an e-lance economy would have profound implications for business and society, and we should begin considering those implications sooner rather than later” (Malone & Laubacher, 1998). And today it’s still our responsibility as academics to continue to consider those implications and challenges for business and our society brought by the “new economy of online sourcing”.

Maybe, the most urgent thing here is for business leaders and managers to challenge their existing mindsets and reconsider the ways they can conduct the business under the new conditions from now: since the traditional organizational boundaries are becoming more permeable, the world is becoming more flat (Gefen & Carmel, 2008), and the external workforces available from online are becoming more abundant, cheaper, and easier to access, how would they configure their internal resources and external resources in a more innovative way to achieve the best business efficiency? Will the existence of online sourcing change the existing working practices, business processes, mechanisms for coordination, and roles of management, and all other business functions, and how? How would organizations integrate different types of services including internal services, outsourcing services and online services? What about the risk management? It seems that small business owners and entrepreneurs take the lead in this regard: they outsource the other parts to the online workforces that they can more focus on what they are good at (market, network, sales, design and etc); but to do that, they have to redesign their working practices that they have time to manage the online temporary

employees. For large organizations, open innovation seems to be the most adopted business models of online sourcing for the current moment. But just as what we described above, the influences and repercussions of online sourcing to business are broader than just for the R&D function. But how organizations take advantage of online sourcing? This is the question need to be considered by the business leader.

The influences of online sourcing on business are not only at the micro-level, but also at the macro-level: it accelerates the globalization and makes the world more flat than ever since the services can be offered from anywhere of the globe; and it also shapes the industry structure by create some new industries (e.g., online service platforms) and by deteriorating some other old industries. For instances, as what Howe (2008) described, the emergence of iStockphoto, an online image-sharing exchange platform that offers professional-grade photos at very low cost, has already had severe negative influences on traditional graphic designing industries, including the photograph professionals and stock agencies. Actually, the impacts of iStockphoto are so enormous that Getty Images, the largest agency by far, purchased iStockphoto for $50 million. Similar situation has also been observed in other design industries, like logo design, animation design and web design, because of the emergence of online platforms similar to iStockphoto, e.g., CrowdSpring and 99designs. Not mention the huge changes on outsourcing landscape brought by the rise of online sourcing, which we have discussed above in this study.

Besides business, the rise of online sourcing will also have profound influences on human life and our society. Working at home as e-lancers might become fashionable and viable in future as long as one has enough skill sets, consequently, “the e-lance economy well might well lead to a flowering of individual wealth, freedom … and creativity and people might find themselves with much more time for leisure, for education, and for other pursuits” (Malone & Laubacher,

1998). This, of course, will put new challenges on our education systems. How would education systems respond and adapt if more and more people choose to work as freelancers rather than for some specific organization? Should some short-term and specialized programs be developed to suit the needs of those freelancers who want to improve their skill sets and knowledge base? The boom of the online sourcing economy or e-lance economy will also bring out other broad issues to our society, e.g., working ethics in the cyberspace, the benefits and welfare of the freelancers who are alienated from communities that companies create, the low payment of the online "crowdsourcing" labor markets, and the vacancy of regulations and laws in the area of the online sourcing labor markets (Felstiner, 2010). We don't have the answers yet for all those potential questions and implications brought forward here. But we won't be well-prepared for future if we remain blind to them! And this is one of the goals of this study – maybe the most important one – to make people be aware of the existence of online sourcing economy and consider its repercussions and possibilities on business and society for now and for the future!

CHAPTER 9. CONCLUTION

Drawing upon organizational theories, previous outsourcing framework, and online marketplace research, we applied an integrative framework of outsourcing decision to a new outsourcing phenomenon – online sourcing. We have proposed and tested the interrelations among the theoretically derived attributes in terms of the context of online sourcing decision. Our results also indicate the complexities of outsourcing decision, in which many aspects of decision attributes must be taken into account. Furthermore, our research suggests the significant roles of cost reduction and task environment played in online sourcing decision. This study then validated the mediating role of trust in OSP between marketplace decision attributes and online sourcing engagement, indicating the governance role OSP in online sourcing activities. Thus, in doing so, this study sheds new light on: (1) outsourcing decisions in the new context of online sourcing, (2) the role of each theoretical perspective in outsourcing research, (3) the interrelations among theoretically derived outsourcing decision attributes, and (4) the significant role of OSP in governing and facilitating online sourcing activities and transactions.

REFERENCES

Anderson, E., Weitz, B., 1989. “Determinants of Continuity in Conventional Industrial. Channel Dyads,” *Marketing Science*, 8 (4), pp. 310-323.

Ang, S., and Cummings, L. "Strategic Response to Institutional Influences on Informational Systems Outsourcing," *Organizational Science* (8:3) 1997, pp 235-256.

Ang, S., and Straub, D.W. "Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry," *MIS Quarterly* (22:4), 1998, pp 535-552.

Apte, U. 1990. Global outsourcing of information systems and processing services. *The Information Society* **7**(4): 287–303.

Aldrich, H. 1976. “Resource dependence and interorganizational relations: relations between local employment service office and social services sectors organizations”, *Administration and Society*, 7, pp. 419 - 455.

Aldrich, H. and Peffer, J. 1976. Environments of Organizations. Annual Review of Sociology, 2, pp. 79 – 105.

Aubert, B.A., Rivard, S., and Patry, M. "A Transaction Cost Approach to Outsourcing Behavior -

Some Empirical Evidence," *Information & Management* (30:2) 1996, pp. 51-64.

Aubert, B.A., Rivard, S., and Patry, M. “A transaction cost model of IT outsourcing,” *Information & Management*, 41, 2003, pp. 921–932.

Barney, J.B. "Firm Resources and Sustained Competitive Advantage," *Journal & Management* (17:1), 1991, pp 99-120.

Baron, R., and Kenny, D. “The Moderator–Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations,” *Journal of Personality and Social Psychology* (51:6), 1986, pp. 1173-1182.

Blau, P. (1964). *Exchange and Power in Social Life*, New York: Wiley.

Castrogiovanni, G. J. (1991) “Environmental Munificence: A Theoretical Assessment”. *Academy of Management Review*, 16 (3), pp. 542-565.

Cenfetelli, R., Schwarz, A. (2010). “Identifying and Testing the Inhibitors of Technology Usage Intentions,” *Information Systems Research*, forthcoming.

Cheon, M.J., Grover, V., and Teng, J. "Theoretical Perspectives on the Outsourcing of Information Systems," *Journal of Information Technology* (10) 1995, pp 209-210.

Chesbrough, H.W. (2003) *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Cambridge, MA: Harvard Business School Publishing.

Chiles, T. H., J. F. McMackin. 1996. “Integrating variable risk preferences, trust, and transaction cost economics,” *Acad. Management Rev.* 21(1) 73–99.

Chin, W. W. (1998) “The Partial Least Squares Approach to Structural Equation Modeling,” in G. A. Marcoulides (Ed.) *Modern Methods for Business Research*, London, pp. 295-336.

Cho, J. 2006. “The mechanism of trust and distrust formation and their relational outcomes,” *Journal of Retailing*, Vol. 82, No. 1, pp. 25-35.

Churchill, G. A., Jr. (1979), “A Paradigm for Developing Better Measures of Marketing Constructs,” *Journal of Marketing Research*, 16 (February), 64–73.

Coase, R.H. 1937. The nature of the firm. Economica, 4, 13-16, 386-405.

Dasgupta, P., 1988. Trust as a commodity. In: Gambetta, D., (Ed.), Trust: Making and Breaking Cooperative Relations, Basil Blackwell, Oxford, England, pp. 49–72.

Davis. F. D. "Perceived Usefulness. Perceived Ease of Use and User Acceptance of Information Technology," *MIS Quarterly* (13:3), September 1989. pp. 319-340.

Davis, F. D., Bagozzi. R. P., and Warshaw, P. R, "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models." *Management Science* (35:8). August 1989, pp. 982-1003.

Dibbern, J., Goles, T., Hirschheim, R., and Jayatilaka, B. "Information Systems Outsourcing: A Survey and Analysis of the Literature," *Database* (35:3), December 2004, pp 6-102.

Durkheim, E. 1964. *The Division of Labor in Society*. Free Press, New York.

Emerson, R. (1972). “Exchange Theory, Part I: A Psychological Basis for Social Exchange” and “Exchange Theory, Part II: Exchange Relations and Network Structures,” In *Sociological Theories in Progress*, J. Berger, M. Zelditch and B. Anderson (Ed.), New York: Houghton Mifflin.

Ernst & Yong (2009). “Enterprise IT Investment Trends Survey 2009,” available from http://d.yimg.com/kq/groups/23182405/2057420994/name/IT%2520Investment%2520Trends%2520Survey%2520v1.pdf. (Retrieved 2010-11-15)

Espino-Rodriguez, T.F. and Padron-Robaina, V. (2005a), “A Resource-Based View of Outsourcing and Its Implications for Organizational Performance in the Hotel Sector,” *Tourism Management*, Vol. 26, pp. 707-721.

Feller, J., Finnegan, P., and Fitzgerald, B. 2008. “From Peer Production to Productization: A study of Social Enabled Business Exchanges in Open Source Service Networks,” Information Systems Research, 19(4), pp. 475-593.

Fishbein, M., I, Ajzen, 1975, *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research.* Addison-Wesley, Reading, MA.

Felstiner, A, “Working the Crowd: Employment and Labor Law in the Crowdsourcing Industry”, (May 16, 2010). Available at SSRN: http://ssrn.com/abstract=1593853

Fornell, C., and Larcker, D. F. 1981. “Evaluating Structural Equation Models with Unobservable Variables and Measurement Error,” *Journal of Marketing Research* (18:1), pp. 39-50.Consumer Exit-Voice Theory," *Journal of Marketing Research*, 19, 440-452.

Fornell, C., and Bookstein, F. (1982). "Two Structural Equation Models: LISREL and PLS Applied to

Gefen, D., Straub, D. W., and Boudreau, M.C. 2000. “Structural Equation Modeling and Regression: Guidelines for Research Practice,” *Communications of the AIS* (4:7).

Frei, F. 2009. Paid Crowdsourcing: Current State and Progress Toward Mainstream Business Use. http://www.smartsheet.com/paid-crowdsourcing-current-state-and-progress. (Retrieved 2010-11-15)

Gefen, D. 2000. “E-Commerce: The Role of Familiarity and Trust,” *Qmega* (28:6), pp. 725-737.

Gefen, D. 2002. “Customer loyalty in e-commerce,” *J. Assoc. Inform. Systems*, 3, 27–51.

Gefen, D., Karahanna, E., and Straub, D. W. 2003. “Trust and TAM in Online Shopping: An Integrated Model,” MIS Quarterly (27:1), pp. 51-90

Gefen, D., Wyss, S., and Lichtenstein, Y. 2008. “Business Familiarity as Risk Mitigation in Software Development outsourcing Contracts,” *MIS Quarterly*, (32:3), pp. 531-542.

Gefen, D. and Carmel, E. “Is the World Really Flat? A Look at Offshoring at an Online Programming Marketplace”, *MIS Quarterly* (32:2), June 2008, pp. 367-384.

Gopal**,** A. and KoKa, B. R. 2009. “The Relationship between Contracts, Relational Governance, & Vendor Profitability in Software Development Outsourcing,” Academy *of Management Proceedings*, pp. 1-6.

Goo, J., Kishore, R., and Rao, H.R. 2009. “The Role of Service Level Agreements in Relational Management of Information Technology Outsourcing: An Empirical Study,” *MIS quarterly*, 33(1), pp. 119-145.

Goo, J., and Huang, D.D. 2008. “Facilitating Relational Governance through Service Level Agreements in IT Outsourcing: An application of The Commitment-Trust Theory,” *Decision Support Systems*, 46, pp. 216-232.

Grant, R.M. "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation," *California Management Review* (33:3) 1991, pp. 114-135.

Grant, R. M. 1996. “Toward Knowledge-based Theory of the Firm,” *Strategic Management Journal*, pp. 109-122.

Grover, V., Cheon, M. J., & Teng, T. C. 1994a. “A descriptive study on the outsourcing of information systems functions,” *Information and Management*, 27(1), 33–44.

Grover, V., Cheon, M., and Teng, J.T.C.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), pp 179-190.

Gupta, G., & Gupta, H. 1992. Outsourcing the IS function. Is it necessary for your organization? Information Systems Management, 9(3), 44–50.

Hinkin, T.R. (1995). “A review of scale development practices in the study of organizations,” *Journal of Management*, 21, pp. 967-988.

Howe J., The rise of crowdsourcing, *Wired*, June 2006. Available: http://www.wired.com/wired/archive/14.06/crowds.html. (Retrieved 2010-12-18)

Howard, R. 1993. *The Virtual Community*. Reading, Mass: Addison-Wesley.

Jayatilaka, B., Schwarz, A. and Hirschheim, R. 2003. “Determinants of ASP Choice: An Integrated Perspective,” *European Journal of Information Systems*, 12(3), pp. 210 – 224.

Kee, H. W., and Knox, R. E. 1970, Conceptual and methodological considerations in the study of trust and suspicion, J. *Conflict Resolution* 14(3) 357-366

Keen, P, G. W., C, Balance, S. Chan, S, Schrump. 1999, *Electronic Commerce Relationships: Trust by Design.* Prentice-Hall, Englewood Cliffs, NJ,

Keyes, J. *Infotrends.* McGraw-Hill, New York, 1993

Kishore, R., Rao, H. R., Nam, K., Rajagopalan, S., and Chaudhury, A. 2003. “A Relationship Perspective on IT Outsourcing,” *Communications of the ACM*, (46:12), pp. 86-92.

Koh, C., Ang, S., and Straub, D. W. 2004. “IT Outsourcing Success: A Psychological Contract Perspective,” *Information Systems Research*, (15:4), pp. 356-373.

Lacity, M., Hirschheim, R., & Willcocks, L. 1994. “Realizing outsourcing expectations. Incredible expectations, credible outcomes,” *Information Systems Management*, 11(4), 7–18.

Lacity, M., & Willcocks, L. 1995. Interpreting information technology sourcing decisions from a transaction cost perspective: findings and critique. *Accounting, Management and Information Technology*, 5(3/4), 203–244.

Lacity, M., and Hirschheim, R. 1993a "The Information Systems Outsourcing Bandwagon," *Sloan Management Review* (35:1), pp 73-86.

Lacity, M., and Hirschheim, R. 1993b. *Information Systems Outsourcing: Myths, Metaphors and Realities* John Wiley & Sons, Chichester,

Lee. D., Park. J.. and Ahn. J. 2001. “On the Explanation of Factors Affecting E-Commerce Adoption,” *Proceedings of the 22nd international Conference on Information Systems,* V. Storey. S. Sarker, and J. I. DeGross (eds.), NewOrieans, Louisiana, pp, 109-120

Lee, J.-N., and Kim, Y.-G. 1999. “Effect of Partnership Quality on IS Outsourcing: Conceptual Framework and Empirical Validation,” *Journal of Management Information Systems*, (15:4), pp. 29-61.

Lee, G. K., and R. E. Cole.2003. “From a firm-based to a community based model of knowledge creation: The case of the Linux kernel development’. *Organization Science*14/6: 633–649.

Lee, J. N., Miranda, S. M., and Kim, Y. M. 2004. “IT Outsourcing Strategies: Universalistic, Contingency, and Configurational Explanations of Success,” *Information Systems Research* (15:2), pp. 110-131.

Lindell, M. K., and Whitney, D. J. “Accounting for Common Method Variance in Cross-Sectional Research Designs,” *Journal of Applied Psychology*, 86, 1, (2001), 114-121.

Luo, X. “Trust Production and Privacy Concerns on the Internet: A Framework Based on Relationship Marketing and Social Exchange Theory,” *Industrial Marketing Management* (31:2), 2002, pp. 111-118.

Malone, T.W., Laubacher, R. J. 1998. “The Dawn of the E-Lance Economy,” *Harvard Business Review*, 145–152.

Mathwick C., Malhotra N. & Rigdon E. 2001, “Experiential Value: Conceptualization, Measurement and Application in the Catalog and Internet Shopping Environment,” Journal of Retailing, Vol. 77, pp. 39-56.

Mayer, R.C., Davis, J.H. and Schoorman, F.D. 1995. “An Integrative Model of Organizational Trust,” *Academy of Management Review*, 20, pp. 709-734.

Markus, M. L., Manville, B., and Agre,s E. C. 2000."What makes a virtual organization work?," *Sloan Management Review*, vol. 42, pp. 13–26.

Markus, M. L. 2007. "The governance of free/open source software projects: monolithic, multidimensional, or configurational?," *Journal of Management and Governance*, 11(2), pp. 151–163.

Maurizio, R. (2001). "The Virtual Organization," in Proceedings of the 7th International Conference on Concurrent Enterprising, Bremen;

McKnight, D. H. and Chervany, N. L. 2001.Trust and distrust definitions: One bite at a time, in Falcone, R. Singh, M. and Tan, Y. H. (eds.) *Trust in Cyber-Societies: Integrating the Human and Artificial Perspectives*. Berlin: Springer, pp. 27-54.

McKnight, D.H., Choudhury, V., and Kacmar, C. 2002a, "Developing and Validating Trust measures for E-commerce: an Integrative Typology," *Information Systems Research* (13:3), pp. 334-359.

McKnight, D. H., Choudhury, V. and Kacmar, C. 2002b. The Impact of Initial Consumer Trust on Intentions to Transact with a Web Site: A Trust Building Model, *Journal of Strategic Information Systems* 11, 3-4, pp. 297-323.

Milliman, R. E., and Fugate D. L.1988. Using tmst-transference as a persuasion technique: An empirical field investigation. *J. Personal Selling and Sales Management*, 8, pp. 1-7.

Mishra, D. P., Heide, J. B., and Cort, S. G. 1998. "Information Asymmetry and Levels of Agency Relationships," *Journal of Marketing Research*, (35:3), pp. 277-295.

Mitra, S. (2010). Deal Radar 2010: Guru.com, available: http://www.sramanamitra.com/2010/02/23/deal-radar-2010-guru-com/, last access on 1/08/2011.

Netemeyer, R.G., Bearden, W.O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. Thousand Oaks: Sage Publications

Obal, L. 2009. "Microsourcing – Using Information Technology to Create Unexpected Work Relationships and Entrepreneurial Opportunities," *Communications of the Association for Information Systems*, vol 24, pp. 161 -174.

Pavlou, P. A. 2003. Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *Internat. J. Electronic Commerce* 7(3) 69–103.

Pavlou, P. A., and Gefen, D. 2004. "Building Effective Online Marketplaces with Institution-Based Trust," *Information Systems Research* 15(1), pp. 37-59.

Pavlou, P. A., & Dimoka, A. (2006). The Nature and Role of Feedback Text Comments in Online Marketplaces: Implications for Trust Building, Price Premiums, and Seller Differentiation. *Information Systems Research*, *17*(4), 392-414.

Pavlou, P. A., Liang, H., and Xue, Y. 2007. "Understanding and Mitigating Uncertainty in Online Exchange Relationships: A Principal-Agent Perspective," *MIS Quarterly* (31:1), pp. 105-136.

Penrose, E. T. *The Theory of the Growth of the Firm*. New York: John Wiley, 1959.

Pfeffer, J., and Salancik, G.R. "A Social Information Processing Approach to Job Attitudes and Task Design," *Administrative Science Quarterly* (23:2), June 1978, pp 224-253.

Podsakoff, P., and Organ, D. "Self-Reports in Organizational Research: Oroblems and Prospects," *Journal of Management* (12:4), 1986, pp. 531-544.

Podsakoff, S. B., MacKenzie, B., Lee, J. Y., and Podsakoff, N. P. 2003. "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology* (88:5), pp. 879-903.

Poppo, L. and Zenger, T. "Testing Alternative *Theories* of the Firm: Transaction Cost, Knowledge- Based, and Measurement Explanations for Make-or-Buy Decisions in Information Services," *Strategic Management Journal* (19:9), September 1998, pp. 853-877.

Poppo, L., and Zenger, T. 2002. "Do Formal Contracts and Relational Governance Function as Substitutes or Complements?," *Strategic Management Journal* (23), pp. 707-725.

Prahalad, C., and Hamel, G. The core competence of the corporation. *Harvard Bus. Rev.* (May--June 1990), 79-91.

Ringle, C.M., Wende, S., Will, S.: SmartPLS 2.0 (M3) Beta, Hamburg 2005, http://www.smartpls.de.

Rai, A., Maruping, L. M., and Venkatesh, V. 2009. "Offshore Information Systems Project Success: The Role of Social Embeddedness and Cultural Characteristics," *MIS Quarterly* (33:3), pp. 17-641.

Rousseau, D.M., Sitkin, S.B., Burt, R.S. and Camerer, C.1998. "Not so different after all: a cross-discipline view of trust," *Academy of Management Review*, 23, pp. 393-404.

Rumelt, R. *Strategy, structure, and economic performance.* Cambridge, MA: Harvard University Press, 1974.

Sabherwal, R. 1999. "The Role of Trust in Outsourced IS Development Projects," *Communications of the ACM* (42:2), pp. 80-86.

Sako, M., Helper, S., 1998. “Determinants of trust in supplier relations, evidence from the automotive industry in Japan and the United States,” *Journal of Economic Behavior and Organization*, 34, pp. 387–417.

Schwarz, A., Hirschheim, R., Jayatilaka, B., and Goles, T. 2009. “A Conjoint Approach to Understanding IT Application Services Outsourcing,” Journal of the Association for Information Systems 749 Vol. 10 Issue 10 pp. 748-781

Shapiro, S. P. 1987. “The social control of impersonal trust,” *Amer. J. Sociology* 93(3) 623–658.

Sharma, A. and Loh, P. (2009). “Emerging Trends in Sourcing of Business Services,” Business Process management Journal, 15 (2), pp. 149 – 165.

Slaughter, S. and Ang, S. “Employment Outsourcing in Information Systems,” *Communications of the ACM*, 39:7, July 1996, pp. 47-54.

Stevensen, H.H. “Defining corporate strengths and weaknesses,” *Sloan Management Review*, 1976, 27(3), 51-68.

Straub, D.,Weill, P., and Schwaig, K.S. 2008. “Strategic dependence on the IT resource and outsourcing: A test of the strategic control model,” *Inf Syst Front*, 10, pp.195–210

Teng, J., Cheon, M. and Grover, V. (1995). “Decisions to outsource information systems functions: testing a strategy–theoretic–discrepancy model,” *Decision Sciences*, 26, pp. 75–103.

Uzzi, B. 1997. “Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness, *Administrative Science Quarterly* (42:1), pp. 35-67.

Watjatrakul, B. 2005. “Determinants of IS sourcing decisions:A comparative study of transaction cost theory versus the resource-based view,” *Journal of Strategic Information Systems*, 14, pp. 389–415.

Williams, L. J., Edwards, J. R., and Vandenberg, R. J. “Recent Advances in Causal Modeling Methods for Organizational and Management Research,” *Journal of Management* (29:6), 2003, pp. 903-936.

Williamson, O.E. *Market and Hierarchies: Analysis and Antitrust Implications, A Study in the Economics of Internal Organization* Free Press, New York, 1975.

Williamson, O.E. "The Modern Corporation: Origins, Evolution, Attributes," *Journal of Economic Literature* (19:4), December 1981.

Williamson, O.E. *The Economic Institutions of Capitalism* Free Press, New York, 1985.

Williamson, O. E. 1991. “Comparative economic organization: The analysis of discrete structural alternatives.” *Administrative Science* Quarterly, 36: 233–261.

Zack, M.H., and Singh, S. 2010. “A knowledge-based view of outsourcing,” *Int. J. Strategic Change Management*, 12 (1), pp. 32-53.

Zaheer, A., and Venkatraman, N. 1995. “Relational Governance as an Interorganizational Strategy: An Empirical Test of the Role of Trust in Economic Exchange,” *Strategic Management Journal* (16:5), pp. 373-392.

Zucker, L. 1986. “Production of Trust: Institutional Sources of Economic Structure, 1840-1920,” in *Res. Organizational Behavior*, B. M. Staw and L. L. Cummings (eds.). Greenwich CT: JAI Press, pp. 53-111.

APPENDIX A. ONLINE SOURCING VENDERS

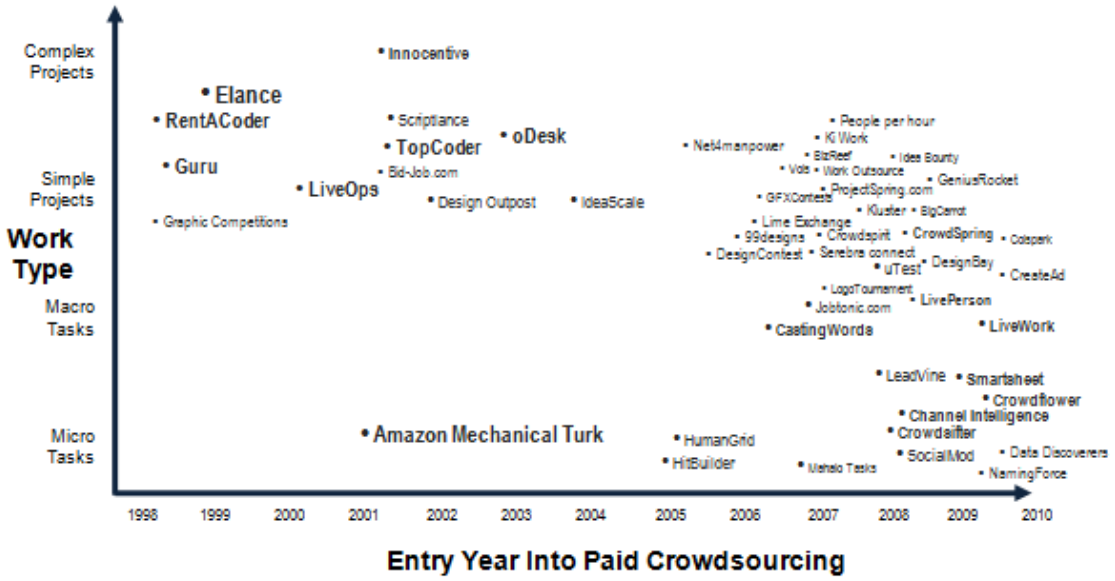


Figure A-1: Online Sourcing Vendors (from Frei, 2009)

Table A-1: Online Sourcing Vendors by 2009 (from Frei, 2009)

Company	Website	Category	Year
99designs	http://99designs.com/	Graphic Design	2006
Amazon Mechanical Turk	www.mturk.com	Volume Tasks	2001
Bid-Job.com	www.bid-job.com	Project Marketplace	2001
BigCarrot	www.bigcarrot.com	Problem Solving	2008
BizReef	www.bizreef.com	Project Marketplace	2007
CastingWords	www.castingwords.com	Transcription	2006
Channel Intelligence	www.channelintelligence.com	Large Scale Categorization	2008
Colspark	www.colspark.com	Problem Solving	2009
CreateAd	www.creatad.com	Graphic Design	2009
Crowdflower	http://crowdflower.com/	Volume Tasks	2009
Crowdsifter	https://crowdsifter.com/	Content Moderation	2008
Crowdspirit	www.crowdspirit.com	Graphic Design	2007
CrowdSpring	www.crowdspring.com/	Graphic Design	2008
Data Discoverers	www.datadiscoverers.com	Volume Tasks	2009
Design Outpost	www.designoutpost.com	Graphic Design	2002
DesignBay	www.designbay.com	Graphic Design	2008
DesignContest.net	www.designcontest.net	Graphic Design	2005
Elance	www.elance.com	Project Marketplace	1998
GeniusRocket	www.geniusrocket.com	Graphic Design	2008
GFXContests	www.gfxcontests.com	Graphic Design	2006
Graphic Competitions	www.graphiccompetitions.com	Graphic Design	1998
Guru	www.guru.com	Project Marketplace	1998
HitBuilder	www.hit-builder.com	Volume Tasks	2005
HumanGrid	www.humangrid.de	Volume Tasks	2005
Idea Bounty	www.ideabounty.com	Problem Solving	2008
IdeaScale	www.ideascale.com	Customer Surveying	2004
Innocentive	www.innocentive.com	Problem Solving	2001
Jobtonic.com	www.jobtonic.com	Job Referral	2007
Ki Work	www.ki-work.com	Project Marketplace	2007
Kluster	www.kluster.com	Customer Surveying	2007
LeadVine	www.leadvine.com	Sales Leads	2008
Lime exchange	www.limeexchange.com	Programmer Marketplace	2006
LivePerson	www.liveperson.com	Expert Help	2008
LiveSourcing (Smartsheet)	www.smartsheet.com	Volume Tasks	2009
LiveWork (LiveOps)	www.livework.com	Any Tasks	2000

Table A-2: continued

LogoTournament	http://logotournament.com/	Graphic Design	2007
Mahalo Tasks	www.mahalo.com	Simple Tasks	2007
NamingForce	www.namingforce.com	Product Naming	2009
Net4manpower	www.net4manpower.com	Project Marketplace	2005
oDesk	www.odesk.com	Project Marketplace	2003
People per hour	www.peopleperhour.com	Project Marketplace	2007
ProjectSpring.com	www.projectspring.com	Project Marketplace	2007
RentACoder (vWorker)	www.rentacoder.com	Programmer Marketplace	1998
Scriptlance	www.scriptlance.com	Programmer Marketplace	2001
Serebra connect	www.serebraconnect.com	Project Marketplace	2007
Smartsourcing (Smartsheet)	www.smartsheet.com	Any Tasks	2009
SocialMod	www.socialmod.com	Content Moderation	2008
TopCoder	www.topcoder.com	Programmer Marketplace	2001
uTest	www.uTest.com	Software Testing	2007
Vois	www.vois.com	Project Marketplace	2007
Work Outsource	www.workoutsource.net	Project Marketplace	2007

APPENDIX B. EXAMPLES OF QUALITATIVE CONTENT ANALYSIS

[Case 1: jamiek8 from vWork.com]

April 20, 2010: I'm completely stunned at how well this works and even though my first contract hasn't even started yet, I have no doubt as to the efficacy and integrity of this process [RU3]. Brilliant concept and execution. I had a winning bid minutes after I posted [RU2]. I am completely confident that the result will be successful [Trust]. I am looking forward to a long and rewarding relationship with your company.[Engagement] Thanks for such great service quality.

[Case 2: Sukaferret from vWork.com]

I just want to say THANK YOU very much for helping with this coder, and getting the project back on track for me. [RS1] You and the Rent A Coder team are very helpful and have serviced my business many times before and I enjoy your system and setup. This is a prime example of why the Rent A Coder program and system works for Buyers. The rules and the guidelines saved me from getting money stolen. [TE5]Thank you. I look forward to being a good client of your service, because I like the way your system and process works. [Engagemet]. Thank you!

[Case 41: Teresa Soroka from Odesk]

A Manhattan entrepreneur knows fashionable rainwear, but she needed outside talent for the eye-catching illustrations to promote it. [RC1]

Teresa Soroka launched Ame Ame because she'd had enough of rainwear in funereal black and crossing-guard yellow. She'd spent a few teen years in Japan, where rain brings out a creative flair that she wanted to import to the United States — and wherever the Internet reaches. What she didn't have, though, was a connection to a talented and affordable artist to provide her site's logo and some fashionable promotional images. [KG1&Cost]

APPENDIX C. SURVEY QUESTIONNAIRE

Thank you for taking time to share us your perspective on the use of RentACoder.com as an outsourcing option for your business. This survey will cover a variety of topics, including what drives your company to use RentACoder.com as a sourcing option, your perceptions about online service transactions, and your beliefs on website technology.

All information collected will be used for research only and will be strictly kept confidential. Your answers to all of the questions are anonymous, so we would like your honest appraisal. We will be aggregating all of the responses to provide RentACoder.com with feedback, so this is also a chance for you to tell them how you feel as a business client!

At the bottom of the screen is a feedback bar. Based upon our experience with surveys such as this, it will likely take you 10 to 15 minutes to complete. But please take your time and read each question carefully; even if questions appear to be identical, they are not. If you have any questions about this survey, please contact the investigator, Baozhou Lu, at blu1@lsu.edu.

Part 1: Background Information

What's your job tile in your current company?

a. Administrative b. Analyst c. Technician
d. First Level Supervisor e. Middle Manager f. Senior Manager
g. Other

Number of years you works for current company: _____

Number of years of business experience: _____

Number of years of outsourcing experience: _____

Number of employees of your company: _____

In which country your company is located: _____

The frequency of using online sourcing for your company:

a. Several times/week b. Once/week c. Several time a week
d. Once/month e. Less than once/month

The frequency of contacting online sourcing providers:

a. At least once/day b. Once/day c. Several times/week
d. Once/week e. Several times/month f. Once/month
g. Less than Once/month

The average value of online outsourcing contracts (in dollars):_____

The average length of online outsourcing contracts (in months):_____

Part 2: Online Sourcing Information

Please indicate the extent that you agree with the following statement:
(-3= strongly disagree; 0 = neither agree nor disagree; and +3 = strongly agree)

Economic drivers

		-3	-2	-1	0	1	2	3
CR1	Using online sourcing has reduced our technological input costs							
CR2	Using online sourcing has reduced our technical personnel costs.							
CR3	Using online sourcing can help us to control and predict our costs.							
CR4	It is cheaper to manage the needed resources in house than to rely on online sourcing providers.							
CR5	We have the scale and volume to justify the needed resources in house.							

Resource-based Perspective								
		-3	-2	-1	0	1	2	3
RG1	The performance of existing internal resources cannot meet the expected quality.							
RG2	Our firm does not have sufficient resource and capabilities for current coding needs.							
RG3	Current internal resources for coding are perceived to be less effective.							
RG4	Current internal resources for coding are perceived to be less efficient.							
RG5	Current internal resources for coding are perceived to be technically incompetent.							
		-3	-2	-1	0	1	2	3
RC1	The acquired online resources from this site are good complements for our company.							
RC2	Our firm uses this site to look for complementary resources.							
RC3	Our firm goes to this site to look for non-strategic resources.							
RC4	The existence of online sourcing will allow our firm to focus on the core competence and activities.							
		-3	-2	-1	0	1	2	3
RU1	It is easy for our firm to acquire the needed resources through this site							
RU2	It is quick for our firm to find the required resources in this site.							
RU3	Resources acquired via this site can be used by our firm efficiently.							
RU4	Resources acquired via this site can be used by our firm effectively.							

Resource-dependency Perspective								
		-3	-2	-1	0	1	2	3
TE1	This site has critical resources that our firm doesn't have.							
TE2	This site has scarce resources that our firm doesn't have.							
TE3	There are enough competent providers available on this site.							
TE4	Current internal resources for coding are perceived to be less efficient.							
TE5	This site provides a stable environment for our firm to acquire external resources.							
		-3	-2	-1	0	1	2	3
RS1	This site provides us a good way to communicate with our external providers.							
RS2	This site provides us a good way to collaborate with our outside providers.							
RS3	Our online providers are always ready for communication and coordination whenever our company has a need.							
RS4	We can effectively communicate and coordination with online providers by using the existing IT infrastructures.							

Knowledge Perspective								
		-3	-2	-1	0	1	2	3
KG1	Our company does not have the sufficient knowledge in house for coding.							
KG2	The knowledge for coding is too complex for our company.							
KG3	It is hard and time consuming to hire the experts for coding for our company.							
KG4	The performance of internal technique staffs cannot meet the desired level of quality for coding.							
KG5	The performance of existing technical staffs is under expectations.							
		-3	-2	-1	0	1	2	3
KA1	There is a large pool of qualified and competent experts in this site.							
KA2	There are a lot diversified experts in this site.							
KA3	This can satisfy the knowledge need of our firm in a broad way.							
KA4	This site provides our firm an easy way to recruit							

	skilled people.							
		-3	-2	-1	0	1	2	3
KR1	We worry about the inside knowledge of our company is exposed via this site.							
KR2	We feel risky to share our company's routing, policy, or ideas with external providers via this site.							
KR3	The intellectual property is not under good protected by using this site.							
KR4	We are worried about the loss of key knowledge abilities by relying on external providers.							
KR5	We worry about the knowledge integration problems between our firm and external providers.							

Online Transaction Perceptions								
		-3	-2	-1	0	1	2	3
PTU1	We feel that using online sourcing from this site involves a high degree of uncertainty.							
PTU2	We feel uncertainty associated with the online service exchanges for our firm.							
PTU3	There is a high degree of uncertainty when relying on online providers for our firm.							
PTU4	Our firm is exposed to many transaction uncertainties if we use online sourcing from this site.							
		-3	-2	-1	0	1	2	3
TISP1	Generally we feel comfortable depending on external online providers.							
TISP2	Our firm can always rely on the external online providers.							
TISP3	We feel that we can count on external online providers to help with a coding problem for our company.							
TISP4	If our firm had a challenging internal problem, we want to use these online providers again.							
		-3	-2	-1	0	1	2	3
TIP1	When there is a need for external resources, we feel comfortable depending on the information provided by this site.							
TIP2	When there is a need for external resources, we feel comfortable depending on the services provided by this site.							
TIP3	We feel that we can count on external online providers to help with a coding problem for our							

	company.							
TIP4	We feel that I could count on this site to help with a sourcing problem for my company.							
TIP5	Faced with a difficult problem, we can always use online platforms like this site.							
TIP6	If our firm had a challenging internal problem, we want to use this site again.							

Technology Perceptions - Website								
		-3	-2	-1	0	1	2	3
EOU1	I believe that the site was difficult to use							
EOU2	It was easy to get the site to do what I wanted it to do.							
EOU3	Learning to use the site was easy for me.							
		-3	-2	-1	0	1	2	3
PU1	Using the site enabled our firm to investigate outsourcing arrangements more quickly.							
PU2	In my opinion, using the site increased our effectiveness in researching outsourcing arrangements.							
PU3	Overall, the sourcing site was useful in researching outsourcing arrangements.							

Online Sourcing Engagement								
		-3	-2	-1	0	1	2	3
ITE1	We will consider to using this site for future outsourcing needs.							
ITE2	We want to remain a customer to this online sourcing site because we genuinely enjoy our relationship with them.							
ITE3	The continuation of a relationship with this site is very important to us.							
ITE4	We are willing to put more effort and investment in building our business relationship with this site.							

APPENDIX D. COMMON METHOD VARIANCE ANALYSIS RESULTS

Table A-1: Common Method Variance Analysis Results

Common Method Variance Analysis Results							
Construct	**TVE 1**	**TVE 2**	**Indicator**	**Substantive Loading (R1)**	**$R1^2$**	**Method Loading (R2)**	**$R2^2$**
Cost Reduction	-	-	CR1	0.858**	0.736	-0.063	0.004
			CR2	0.959**	0.920	-0.131**	0.017
			CR3	0.697**	0.486	0.183**	0.033
Resource Gap	.014	.014	RG3	0.889**	0.790	0.062**	0.004
			RG4	0.889**	0.794	0.010	0.000
			RG5	0.822**	0.699	-0.078**	0.006
Resource Complementarity	.465	.465	RC1	0.811**	0.671	0.083	0.007
			RC2	0.872**	0.658	-0.027	0.001
			RC4	0.895**	0.760	-0.060	0.004
Resource Utilization	.601	.601	RU1	0.836**	0.801	0.091	0.008
			RU2	0.855**	0.731	0.029	0.001
			RU3	0.978**	0.956	-0.091	0.008
			RU4	0.923**	0.852	-0.030	0.001
Task Environment	.220	.221	TE3	0.786**	0.618	0.023	0.001
			TE4	0.909**	0.826	0.007	0.000
			TE5	0.895**	0.801	-0.029	0.001
Resource Suitability	.347	.347	RS1	0.786**	0.618	0.074	0.005
			RS2	0.866**	0.750	-0.020	0.000
			RS3	0.760**	0.578	0.079	0.006
			RS4	0.874**	0.764	-0.146	0.021
Knowledge Gap	.375	.375	KG1	0.871**	0.759	-0.004	0.000
			KG2	0.895**	0.799	0.051*	0.003
			KG3	0.689**	0.479	0.089*	0.008
			KG4	0.917**	0.841	-0.072**	0.005
			KG5	0.812**	0.658	-0.051	0.003
Knowledge Availability	.437	.437	KA1	0.869**	0.755	-0.012	0.000
			KA2	0.925**	0.856	-0.110*	0.012
			KA3	0.781**	0.610	0.147**	0.022
			KA4	0.860**	0.740	-0.041	0.002
Knowledge Risks	.044	.044	KR2	0.845**	0.714	0.043	0.002
			KR3	0.792**	0.627	-0.055	0.003
			KR4	0.878**	0.771	0.041	0.002
			KR5	0.843**	0.711	-0.032	0.001

Table A-2: continued

Trust in platform	.648	.648	TIP1	0.711**	0.506	0.118	0.014
			TIP2	0.864**	0.746	0.004	0.000
			TIP3	0.876**	0.767	-0.059	0.003
			TIP4	0.929**	0.863	-0.162	0.026
			TIP5	0.868**	0.753	-0.052	0.003
			TIP6	0.665**	0.442	0.1425	0.020
Trust in service providers	.554	.554	TISP1	0.782**	0.612	0.081	0.007
			TISP2	0.964**	0.929	-0.141**	0.020
			TISP3	0.945**	0.893	-0.084	0.007
			TISP4	0.698**	0.487	0.145	0.021
Intention To Engage	.576	.576	ITE1	0.765**	0.585	0.132**	0.017
			ITE2	0.884**	0.781	0.040	0.002
			ITE3	0.950**	0.903	-0.037	0.001
			ITE4	0.992**	0.984	-0.136**	0.018
			Average	0.852	0.731	-0.001	0.007
Note: TVE1 – total variance explained without common method, TVE2 - total variance explained with common method; *p < .05; **p < .01							

APPENDIX E. COMMON METHOD VARIANCE ANALYSIS FOR PLS MODEL

The following analytical procedures for assessing the effects of CMV by including a common-method-construct in the PLS model are primarily followed Liang et al., (2007) and Podsakoff et al. (2003). For detailed discussions on the CMV analysis by using PLS, please refer Lang et al., (2003); and for detailed discussions about the CMV, sources of CMV and the remedy procedures and methods for CMV, please refer Podsakoff et al. (2003).

Following Liang et al. (2003), we created a PLS model (Figure F1) to assess common method bias by including a common-method-construct, which is named as "CM" in Figure E1. We only include the major constructs of interest in the PLS model for simplicity. The common-method-construct (CM) links to all of the single-indicator constructs that were converted from the observed indicators. As the result, all major constructs of interest and the method construct become second-order constructs that need to repeat the corresponding observed variables in the PLS model. For each single-indicator construct in Figure F1, we examined the coefficients of its two incoming paths from its substantive construct and the common-method-construct. These two path coefficients are equivalent to the observed indicator's loadings on its substantive construct and the common-method-construct and can be used to assess the presence of common method variance (Liang et al., 2003).

According to Williams et al. (2003), evidence of common method bias can be obtained by examining the statistical significance of factor loadings of the method construct and comparing the variances of each observed indicator explained by its substantive construct and the method factor (Liang et al., 2007). Thus, the squared values of the method construct loadings can be interpreted as the percent of indicator variance caused by method, whereas the squared

loadings of substantive constructs can be interpreted as the percent of indicator variance caused by substantive constructs (Liang et al., 2007). And if the method factor loadings are insignificant and the indicator's substantive variances are substantially greater than their method variances, we can conclude that common method bias is unlikely to be a serious concern for current research.

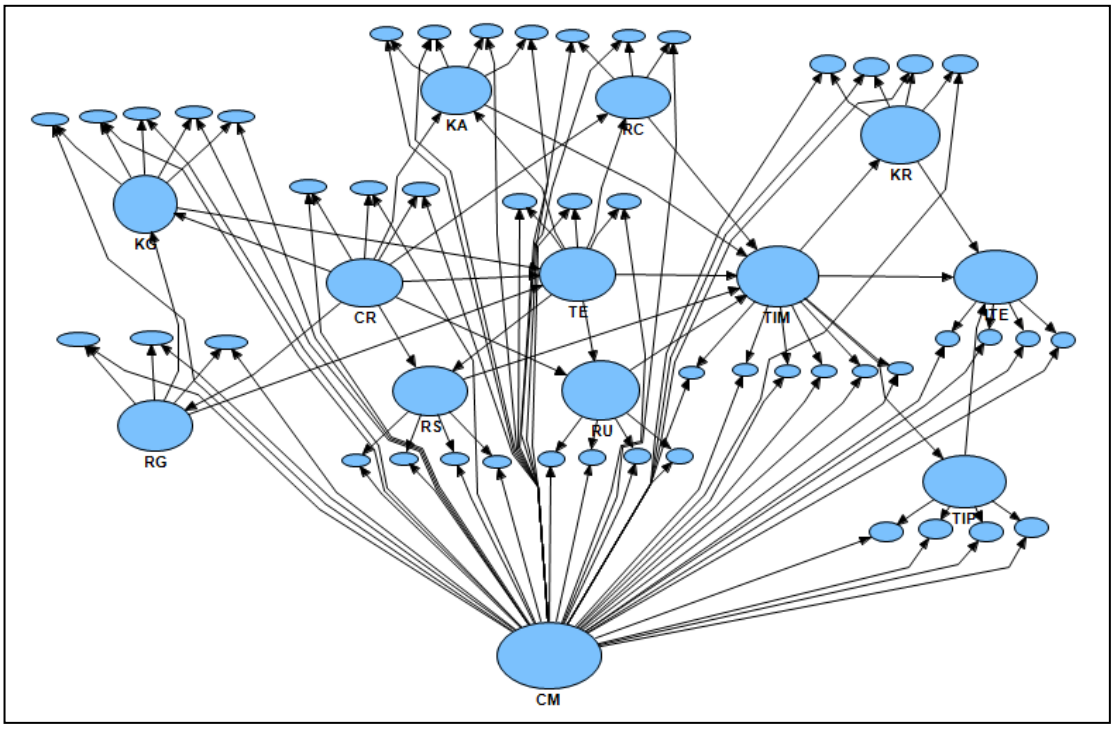


Figure A-1: The PLS Model for Assessing CMV by Including a Common-Method-Construct

VITA

Baozhou Lu was born in Shandong, China. He earned a Bachelor of Science degree from Fudan University in 2001, a Master of Management degree from Fudan University in 2004, and will complete his doctoral degree in the August of 2011. Baozhou Lu conducts research on information systems topics such as information technology outsourcing, online sourcing, online marketplace and virtual community, and electronic business. He is married and has two children.