

Who They Know and What They Know: Risk Management Implications of Subcontractors' Interfirm Alliances and Service Scope

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ABSTRACT

This project management study examines subcontractor selection through the lens of risk management and identifies the possible combined impact of subcontractor interfirm alliances and service scope on project outcomes. Utilizing company records and qualitative interview data from members of a joint venture, whose two stakeholders were oil and gas multinational corporations operating in Saudi Arabia, we posit a 2x2 matrix indicating the preferred quadrant in which subcontractors could be selected. From the data, it appears subcontractors who are both free from interfirm alliances and offer a wide scope of services are preferred. Project managers should exercise caution when employing subcontractors whose service offerings are limited and are aligned in some fashion with the main contractor through joint ventures or subsidiaries.

INTRODUCTION

Project risk management has been thoroughly analyzed in the literature with various investigators discussing findings designed to improve project outcomes. The Project Management Body of Knowledge (PMBOK) (2013) identifies risk management as one of its 10 necessary knowledge domains, and defines the objectives of project risk management as activities that “increase the likelihood and impact of positive events, and decrease the likelihood and impact of negative events” (PMBOK, 2013, p. 309). Further, when identifying external project risk categories, such as those captured in a risk breakdown structure, PMBOK identified subcontractors and suppliers as possible risk contributors. Achieving project success through the proper pre-qualification of subcontractors has remained a topic of project management investigation (Holt, 1998; Mbachu, 2008; Doloi, 2009).

There have been many researchers who have studied aspects of subcontractor choice and project outcomes (Andruskevicius, 2005; Cheng, Tsai & Ziao, 2006; Turskis, et al. 2006; Skitmore, 1989; Hatush & Skitmore, 1998; Olson, 1998; and Fong & Choi, 2000). Considering project risk and subcontractor selection, Singh and Tiong (2006) investigated a multi-decision system “capable of assessing multiple attributes of the candidate contractors so that the risk of

project failure due to the selection of an inappropriate contractor is minimized” (p. 998). There have been other researchers aiming to reduce project risk by proposing “models” for subcontractor selection such as the analytical hierarchy process (AHP) (Al-Subhi Al-Harbi, 2001); elimination and choice expressing reality III (ELECTRE III) (Marzouk, 2010); multi-attribute utility theory (MAUT); (Lambropoulos, 2007); fuzzy set theory (Padhi & Mohapatra, 2010); decision support systems (El-Sayegh, 2009); cluster analysis (Holt, 1998), bid evaluation (Lai, et al., 2004) among several others.

Despite these complex models, when discussing the hypothetical relationship between subcontractor selection and subsequent project success, several investigators have succinctly summed up their findings in straight-forward comments. Doloï (2009) found that, “...technical expertise, past success, time in business, work methods, and working capital significantly impact contractors’ performance across time, cost and quality success” (p. 1245). Walraven & De Vries (2009) concluded their discussion when they suggested, “An incapable contractor increases the chance of delays, cost overruns, substandard work, disputes or even bankruptcy” (p. 597). Finally, Enyinda, et al. (2011) offered, “Successful completion of either a private sector or government projects depends on the proper selection of the most appropriate contractor or set of core contractors” (p. 10).

With the strategic importance of these subcontractor selection findings understood, we turn our attention toward phenomena within the subcontractor selection process which has been previously unexamined. Our aim in this paper is to uncover the potential influence the subcontractor’s service origin and service scope may have on project outcomes which can become of keener interest to managers working in multi-national organizations, specifically those managers who partner, via an alliance, with other similarly structured corporations. In some instances, subcontractors are part of a large multi-national conglomerate which may be in league with the contracting organization. These same subcontractors may also offer a limited to full range of services. Taken together then, these loosely affiliated subcontractors, who offer varied degrees of services, may present their own unique set of project management complications and risk opportunities.

Affiliations and “Low-ball” Bidding – A Review

Before we examine affiliated subcontractors in more detail, it is helpful to understand the origins of organizational affiliation. Multinational corporations (MNC) often partner with one another to create value or sustain a competitive advantage in regions throughout the world. As nations develop, the contracting parties can gain a strategic foothold with their product or service and reap the rewards that accompany such interfirm partnerships (Bandfield, et al., 2003). However, despite these financial opportunities, “...cooperation in such relationships is neither automatic nor easily fostered” (Malhotra & Lumineau, 2011, p. 981) and project risks can arise due to the erosion of the interfirm working relationship. Malhotra and Lumineau (2011) further suggest that there are two key impediments to interfirm cooperation thus increasing project risk, “...the threat of exploitation by opportunistic exchange partners and the possibility of coordination failures” (p. 981). The size of many multinational corporations with their plethora of subsidiaries, limited partnerships and divisions only compounds matters and contractual relationships between related MNCs may experience an imbalance of power (Macneil, 1974). These imbalances can then lead to inter-organizational political influences, forced company collaborations and partner subsidies (Jamali & Mirshak, 2010). These dynamics can make contract governance cumbersome and potentially increase project risk. In summary then, a combination of an imbalance of power; opportunities for exploitation and operations within an affiliated relationship

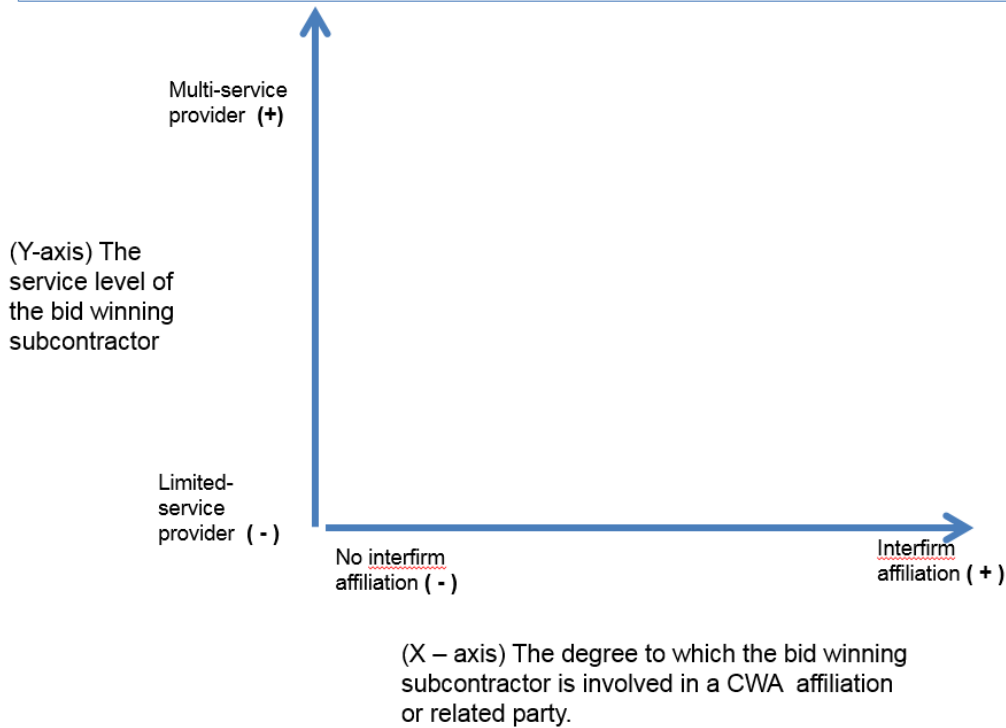
can benefit one member of the related party whilst simultaneously harming the other. These factors can conceptually create a potent, external project risk.

While the imbalance of power can create risk for projects and their sponsors, other key decision points in selecting subcontractors can also increase project risk. With strong consideration given to the transactional cost approach (Anderson & Gatignon, 1986) many MNC alliances begin with a desire to lessen costs (Tse, et al., 1997) and commence the contracting process with competitive bidding. "Economic theory suggests that competitive bidding benefits market participants by encouraging improved quality at reduced prices." (Johnstone, et al., 2004, p. 28) Reduced prices often take the form of "low-ball bidding" in which the bidder is seeking the business relationship and is willing to sacrifice significant profitability to gain the contract. Therefore, the contractor with the lowest bid wins the contract and enjoys the benefits thereof. However, low-ball bidding efforts are not without detractors. Elitzur and Falk (1996) conclude that low-ball bidding could lead to a decline in service quality. "The selection of the lowest bid in assessing the contractors is a widely used practice, yet this is found to be a significant cause for project failure" (Doloi, 2009 p. 1248). Singh & Tiong (2006) suggest, "The selection of the lowest bidder is one of the major reasons for project delivery problems as contractors, when faced with a shortage of work, desperately quoted a low bid price simply to remain in business with the expectation to be offset through claims". (p. 998) Enyinda, et al. (2011) found the narrow mindset of selecting subcontractors on the criteria of least cost can lead to "...cost overruns, project completion delays, abandonment of projects, among others". (p. 9) While there may be many disadvantages to selecting the lowest-bidding contractor, our primary interest is in the scope of services offered by these same low-ball bidding subcontractors and what, if any, this practice has on project outcomes. Street & Cameron (2007) found that many low-ball bidders had a limited service expertise (or service scope). This limitation only confounds the project manager who is looking for subcontractor service-flexibility in leading the project to its successful conclusion. In theory then, a lack of flexibility, produced by the limited service scope on the part of a low-ball bidding subcontractor, may cause that same affiliated contractor to leverage political influence within their MNCs to win contract disputes. These actions potentially increase the risk to the integrity of the project team and more importantly the project itself.

Our study considers this previously unexamined relationship between these two continuum – the degree to which subcontractors are affiliated (or related) with the contracting organization through a MNC (or surrogate) and the degree to which this same bid-awarded subcontractor, who may have entered the relationship through "low-ball" bidding, is a limited-service provider. Our examination involves the oil/gasoline industry whose players are MNCs engaged in an interfirm alliance via a joint venture. Through company documents and qualitative interviews, we develop two continuum as illustrated in Figure 1. Our desire is to recognize the risk management dilemma project managers contend with when managing subcontractors operating within an interfirm affiliation (or related party) while also emphasizing the capabilities of those same subcontractors that desire to enter a business relationship through low-ball bidding.

This paper is structured as follows: the next section discusses the business case including: a) the industry b) geographic region c) the organizations (including their nations of origin) which are engaged in the interfirm collaboration and d) related party transactions involving limited-service and multi-service bid winning contractors. Following, we ground the axes of our model in literature and then explain our qualitative interviewing method. Next, utilizing quotes from each of our interviewees, we describe the four quadrants of a proposed 2x2 matrix which is followed by our findings from the interviews. Lastly, conclusions from the findings are presented for practitioner use, along with the study's limitations and some practical implications for future research.

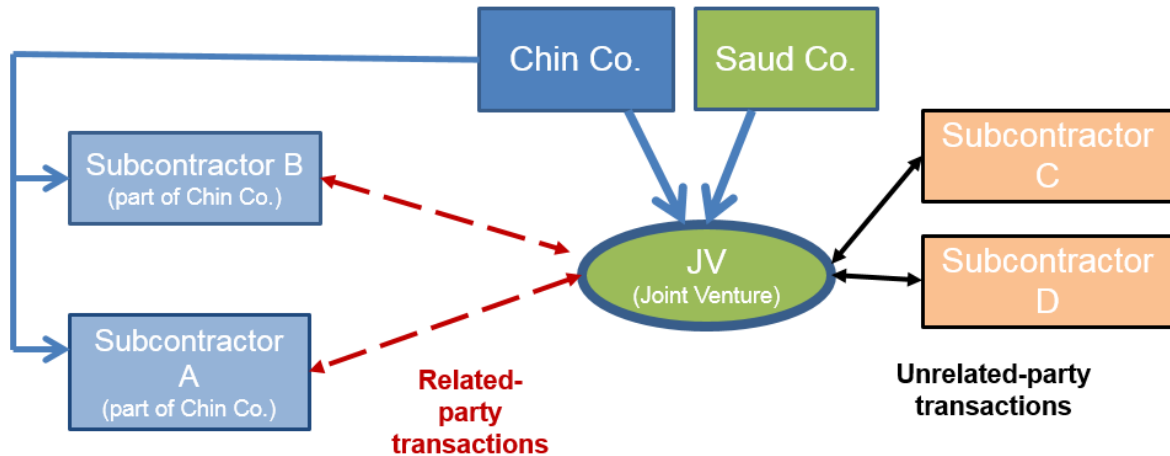
Figure 1 – Hypothetical Continua Indicating Subcontractor Service-Scope and Affiliation Level



STUDY CASE - INDUSTRY AND ORGANIZATIONAL AFFILIATIONS

The crude-oil and natural gas industry is world-wide in scope and touches many countries. Companies acting alone or in collaboration survey, construct platforms, drill, chemically process, distribute and retail the various products for the ever increasing global demand for oil and natural gas. This business arrangement takes place in Saudi Arabia and involves two multinational corporations, one headquartered in China and the other in Saudi Arabia, working together to successfully extract oil and natural gas. Figure 2 illustrates the interfirm connections between these two corporations, including their subsidiaries, and non-related business partners engaged in contracting activities. These entities are detailed in the following paragraphs.

Figure 2 – Case Study Organizations and Relationships



Joint Venture (JV) was cooperatively formed by Chin Co., a Chinese oil company, and Saud Co., an oil company from the host country (Saudi Arabia) in 2004. As an international joint venture project based in Saudi Arabia, the JV, embedded in the business network of the host country, was to drill for and extract natural gas whilst relying heavily on local resources for project implementation.

Chin Co., a parent company of the JV, is a large-scale, state-owned enterprise specializing in contracting international oil and natural gas projects in China and around the world. Chin Co. has expanded its business to more than 20 countries, in which there are 38 oil exploration and development projects including the international joint venture project within this study.

Saud Co. is a state-controlled oil company in Saudi Arabia. It embraced international joint ventures with great enthusiasm several years ago to support its population’s employment needs and stimulate economic growth in the region.

Subcontractor A, is a multi-service, affiliated subcontractor with Chin Co. whose service offerings are similar to subcontractors C and D.

Subcontractor B is a limited-service, affiliated, low-ball bidding subcontractor and a subsidiary of Chin Co. It is exclusively authorized to undertake petroleum services in Saudi Arabia, including drilling services and geophysical surveys, on behalf of Chin Co.

Subcontractors C is a nonaffiliated, limited service subcontractor who provides borehole well logging (“mud-logging”) of rock cuttings brought to ground-surface.

Subcontractor D is a nonaffiliated, multi-service subcontractors who have extensive operational knowledge of the oil and gas industry as it pertains to surveying, drilling, extraction, process and transportation.

METHODOLOGY

To produce insights involving these joined continuums heretofore unanalyzed, we considered it useful to examine a broad range of contracts with multiple vendors (and/or subcontractors) within a business relationship between two multinational corporations. According to Eisenhardt (1989), randomly chosen cases are neither necessary nor preferred. To ensure that the hypothesized links emerged, we asked our project managers to consider extreme cases on either end of the continuum. Therefore, for the purposes of this research, we considered bid-winning subcontractors who offered limited or multiple services and the degree to which these same contractors were aligned (or not) with an affiliated organization.

We interviewed six employees representing senior management, project management, accounting, purchasing and legal. This analysis spanned four years and included over 200 contracts valued at over \$100 million dollars dealing with subcontractors and related contractor parties. The structured interviews consisted of a series of well-defined, open-ended questions (Eisenhardt, 1989). When doing qualitative interviewing, there is always the risk responses may be misleading or distorted due to various reasons including the sensitive nature of the research. To avoid this, we consciously chose not to ask directly about any particular contractor but to ask conceptual questions housed along both ends of our continuum. The interview questions were asked to capture how project managers dealt with the experience of managing multi-service and limited service bid winning subcontractors with or without organizational (or interfirm) alliances.

The interviews, lasting about an hour each, were transcribed and analyzed using a coding process in which the data was categorized using qualitative analysis methods (Strauss & Corbin, 1977). The interviews were examined for statements or keywords that captured the project managers' experience. As patterns emerged, the data was conceptually ordered along the X and Y axis of Figure 1 (with X representing the degree of interfirm alliance and Y representing the number of services offered by bid-winning subcontractors) thus giving a grounded nature to the hypothesized model. Special care was taken to preserve the respondents' own words and viewpoints to maintain their conceptual emphasis (Lieblich, et al., 1998). A copy of the questionnaire and a table of responses are available upon request.

In referring back to Figure 1, we began by examining our proposed X-axis which demonstrates the continuum of a subcontractor operating without an affiliation or conversely with strong interfirm affiliations. While some organizations choose to avoid such organizational alliances, or what Ledger (2003) labelled as "collaborative working arrangements" (CWA), others do not (Street & Cameron, 2007). An alliance is defined as "a close, collaborative relationship between two or more, firms with the intent of accomplishing mutually compatible goals that would be difficult for each to accomplish alone" (Spekman, et al., 2000, p. 37). Street & Cameron (2007) suggested that engaging in collaboration with a foreign partner is done to increase sales and market share. They continue, "in order to thrive, businesses are often advised to develop relationships with external organizations that have the potential to assist business development, survival and growth" (p. 239). Therefore, if perceived as advantageous, organizations may align themselves with other entities to further their ambitions.

Referring once again to Figure 1, we continue our examination of the proposed model by referencing the Y-axis which details the service level of tender-winning ("low-ball") contractors. Subcontractor selection has received considerable attention in the literature (Vijayvagy, 2012; Boer, et al., 2001; Bhutta & Hug, 2002) whose selection criteria included: strategic fit, top management compatibility, management attitude/outlook for the future, trust, compatibility across all levels of the organization, cost, quality, delivery reliability, technology and service. However,

price (or cost) still remains the primary selection criteria. “Although main contractors adopt a multi-criteria selection process and perceive all four (price, technical know-how, quality and cooperation) to be important for their choice decision, the actual choice situation reveals that price is still by far the most important criteria...” (Hartmann, et al., 2009, p. 826). Narrowing further, our focus concerns these low-bid, contract-winners and the scope of services they offer. Specifically, how the winning low-ball bidders with limited service offerings potentially increase project risk.

Hoban & Francis (2003) see the subcontractor as a specialist employed by a main contractor to perform specific tasks. Street and Cameron (2007) refer to subcontracting organizations as subject matter experts with certain expertise in specific areas. These views of subcontractors describe a highly-trained, narrowly focused group employed to resolve a specific problem. This narrow focus has caused some issues with large projects. Kumaraswamy & Matthews (2000) posited that contractor selection is important because many defaults in projects have been due to subcontractors accepting jobs or being assigned additional tasks they cannot perform. As general contractors offer tenders to subcontractors (i.e. low-ball bidder) based on price alone, they may be causing themselves harm in the long term due to the subcontractor’s limitations or inability to perform. Mbachu (2008) concurred with this point by suggesting that main contractors often select subcontractors who lacked the necessary skills and dispositions to perform. Therefore, it appears that subcontractor selection should consider the scope of contractor services in addition to price, quality, etc. As Mbachu (2008) further offered, “Optimal selection of subcontractors on the basis of overall ability to perform, rather than on tender price alone, is crucial to successful project delivery” (p. 472). This overall ability to perform would include the level or scope of services offered.

QUALITATIVE ANALYSIS

We now present the qualitative analysis from the research study. Referring again to the hypothesized model in Figure 1, respondent views from each of the continuums are presented beginning with the bottom-left region (limited service provider/no interfirm affiliations), then top-left region (multi-service providers/no interfirm affiliations), followed by the top-right region (multi-service providers/strong interfirm affiliations) and finally the bottom-right region (limited service provider/strong interfirm affiliations).

Bottom-Left Region – limited service, subcontractor with no interfirm affiliations

As it pertains to interfirm affiliations, the respondents seemed to prefer subcontractors that were not affiliated with either parent company (Chin Co or Saud Co) or JV. These responses deal with the market-based nature of the non-affiliated subcontractor selection rather than the politicized nature of a subcontractor with affiliations. A respondent opined,

The relationship will be simpler via the market”. Another echoed these similar sentiments when he said, “It will make things simpler; it’s just business to business, no need to worry about politics between partners. It made my life easier.

Still another interviewee commented,

It is a market based system, similar to ‘B2B’. You have arbitration and the judicial system to resolve contract disputes and/or claims. You don’t have to balance anything within the larger corporation.

Issues concerning conflict settlement continued to surface during the interviews. These comments expose relationships fraught with more political distractions and perceived conflicts of interest. A senior buyer commented,

The only thing we should care about is the contract and its appendix. In addition, we don't have to worry about how to deal with Saud Co...

A project manager commented,

"It was easier for JV to select non-affiliated contractors and manage the contracts with them because neither of the shareholders (Chin Co or Saud Co) would assume the presence of a "conflict of interest" or perceived opportunism.

When dealing with contract governance then, it appears that non-affiliated subcontractors are preferred to those in an alliance. However, as pointed out earlier in the literature, some subcontractors desire affiliations for business development, survival or growth. This region also includes those subcontractors whose service offerings are limited and are perceived as having fewer opportunities for revenues and subsequent margin. In considering a limited service, nonaffiliated subcontractor, (Subcontractor C) one senior buyer commented,

...(they) already felt satisfied with their profit level....They just focus on what they originally bid for.

A legal advisor commented when considering limited service subcontractors,

They wanted contract extensions, not contract amendments or change orders to expand their services, and they focused only on their original scope of work.

A project manager added,

The company seemed to operate in a manner that was very short term focused and a narrow window with which to make money. This shortened focus/narrow window led them to make decisions that were costly to both organizations and ultimately produced a very short organizational relationship.

General contractors seek flexibility and subcontractors who can offer service scope while maintaining the price and quality of a subject matter expert. Subcontractors who offer multiple services intend to strengthen the relationship through service scale and scope which builds mutual trust for future endeavors. While difficult for subcontractors to achieve, obtaining expertise in several service offerings can have its rewards.

Top-Left Region - Multi-service, contractor with no interfirm affiliations

This region enjoys the same benefits as the bottom-left as it pertains to interfirm affiliations. Main and subcontractors enjoy working together in a market-driven environment without the anxieties of political pressures, partner suspicions, extensive contract governance or lengthy contract disputes. However, this region differs when considering low-bid contract winners. This region focuses upon those low-bid winners who offered a variety of services. Some subcontractors have a strategy to enter into the relationship through low-ball bidding in a competitive bidding environment. Once the contract is won, they employ other strategies to their expand services and thereby gain revenues. These comments deal with those subcontractors, their strategy and benefits to the main contractors. A senior buyer said,

Being a current subcontractor gives you an advantage because you're able to have access to the company's business and inside information.

This "inside" position in theory aids both the main contractor through reduced learning curve and the subcontractor in building a long-term relationship. She continued,

You (the subcontractor) can figure out what we (the main contractor) need most. By offering what we desperately needed, the company (subcontractor) will improve its margin and make up any loss from the 'low ball' bid.

A legal advisor offered,

Subcontractor D got it, became familiar with our operations and started to extend their services through change orders... those change orders were easier to get approval in order to meet operational urgency.

Another interviewee added,

The difference between them is just that some (subcontractors) were smarter than the others, making more money by amending contracts...which helped us.

In discussing subcontractor strategy, still another interviewee provided,

Subcontractor D made it. They made big money from the contract amendments.

A senior buyer concluded,

...by executing such strategy, some of the (sub) contractors successfully extended their contracts— like subcontractor D.

This region enjoys the benefits of non-affiliated subcontractors such as loose approval procedures of contract amendment for non-affiliates. Other benefits manifest themselves due to the subcontractor's detailed knowledge of the main contractor's needs; reduced time by the main contractor spent on subcontractor selection and approval; and an improved business relationship between the parties due to the scope and length of the association. Although caution by the main contractor should be exercised to prevent excessive subcontractor fees-for-service, these benefits should aid the main contractor in successfully completing a project. This region also offers enhanced opportunities for subcontractors to gain revenues or develop their businesses.

Top-Right Region – Multi-service subcontractor with strong interfirm affiliations

Respondents viewed interfirm affiliations with caution. Their preference was for nonaffiliated subcontractors due to multiple reasons stated as benefits in bottom-left and top-left regions. Generally, affiliations risk the business relationship and can impose artificial obstructions which require managerial and political finessing. Speaking about interfirm relations for a joint venture project, one interviewee responded,

External auditing becomes a nightmare. You don't have arbitration or the judicial system to resolve disputes. The minor shareholders often believe they are being held in a disadvantaged position.

Continuing this theme another interviewee said,

You only have non-market based solutions for problems with an affiliate. Take for example a dispute (with an affiliated contractor). This dispute was caused by the

ambiguous or “poorly written” payment terms of the contract. Since they are an affiliate, we have to resort to senior management for a solution...The thing is we have to convince the auditors that the solution given by senior management is right.

These comments highlight risks with interfirm affiliations which include negative perceptions, managerial challenges and external auditor scrutiny. The following comments deal with the breakdown of partner trust and quality standards. A senior manager said,

As a joint venture, we faced pressures from both parent companies that didn't trust each other at the beginning, especially the local parent, who thought the foreign company stole money through contracting with its affiliates at a higher price and unfavorable conditions. So this is a very sensitive topic at board meetings.

Still another interviewee added,

...internal partnerships compromise the efficiency and quality of the project execution by an affiliate because market forces would not function as well as it is supposed to.

Referring to political pressures, this last interviewee cautioned against affiliate subcontractors because rules governed by market forces (litigation, arbitration) may no longer apply. With the prospect of these penalties removed, parties may not perform to expected levels. However, there may be benefits of adopting a subcontractor from this region. In terms of using a multi-service provider with interfirm affiliations, one respondent favorably described Subcontractor A's long-term orientation as:

The goal of Subcontractor A was not limited to the first term of the contract (due to multiple service offerings), but for the long term cooperation with JV and even extended to Saud Co for a new and bigger market.

While the benefits of a multi-service provider described in the top-left region apply in the top-right region, the issues of interfirm relations can make the business partnership cumbersome and less than optimal.

Bottom-Right Region – Limited service subcontractor with strong interfirm affiliations

Unfortunately this region contains multiple managerial challenges and risks. It combines the limited service subcontractor issues addressed in bottom-left region with the complications imposed by interfirm affiliations described in top-right region. The following quotes describe Subcontractor B, a limited-service subcontractor who had interfirm relationships. A senior buyer commented,

To win a dispute, Subcontractor B, as a related party, referred this issue to Chin Co, a shareholder of JV for their support. In this case, Subcontractor B tried to leverage its political power for business sake.

Another interviewee responded,

I don't want to deal with related parties again, especially Subcontractor B. They have ruined their reputation.

A legal advisor recalled,

...to deal with Subcontractor B, however, all of our efforts didn't make anyone happy. Subcontractor B kept raising disputes on purpose. I think this was their strategy,

exploiting current scope of work without expecting better partnership with company to expand services.

This subcontractor's relationships and limited service offerings had a profound impact on all parties involved. It seems most of the stakeholders were unnecessarily preoccupied with interfirm transactions, political posturing or damage control. Commenting on related parties (interfirm affiliations), the following interviewees cautioned against using them. A senior buyer,

Yes, the affiliate contractors usually resorted to political power at its interest rather than focus on the deliverable itself - improve quality, cut costs and meet schedule. Any problems occurring between the company and affiliate contractor, the contractor intended to look up internally for help rather than refer to the contract/agreement.

A project manager offered,

A related party transaction is always a little more risky than nonaffiliated contractors – especially for publicly traded companies. Within these partnerships, a temptation exists to hide expenses of one and place it with another or take revenues of one and give it to another.

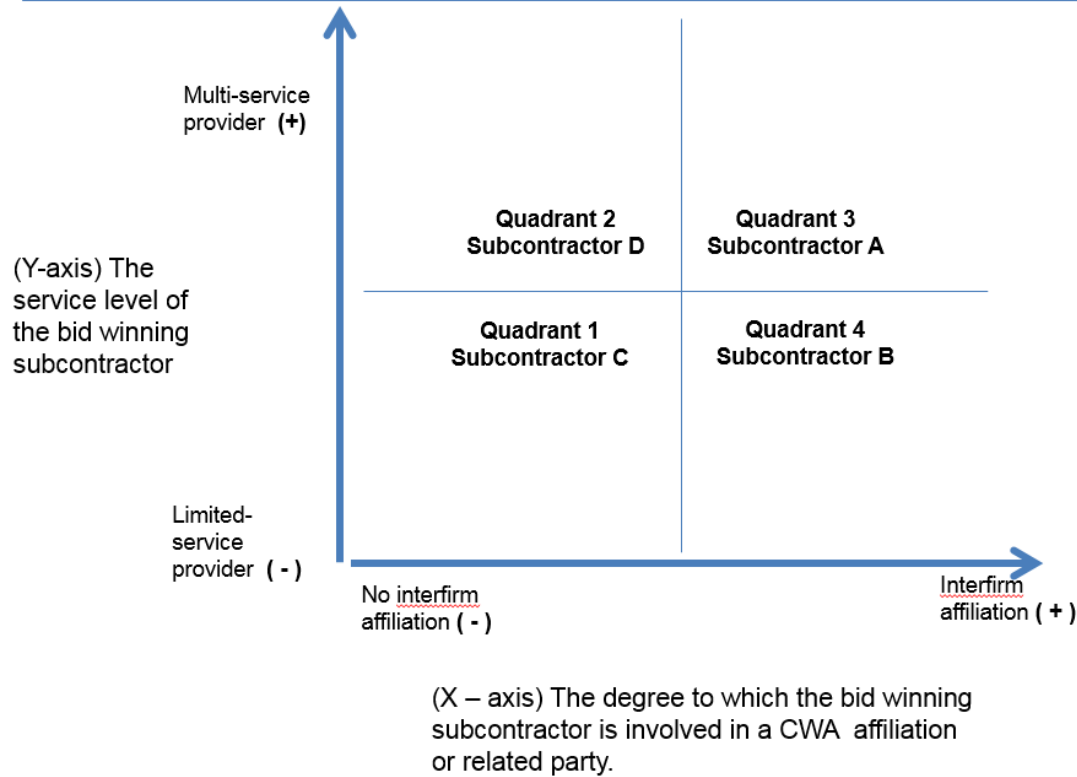
A legal advisor responded,

Related party transactions almost killed me, as a legal adviser, I have to pursue approval...Each resolution took about 3 months.

Interfirm affiliations, also known as related party transactions, seem to present several managerial encumbrances for project managers to navigate around. While considering most project managers appreciate flexibility in negotiating successful projects, subcontractors with limited service offerings confound that desire and place more pressure on project managers to perform.

Based on the descriptions of the aforementioned subcontractors along the continuums of affiliation (x-axis) and service level (y-axis), we offer a theoretical 2x2 matrix with accompanying quadrants in Figure 3:

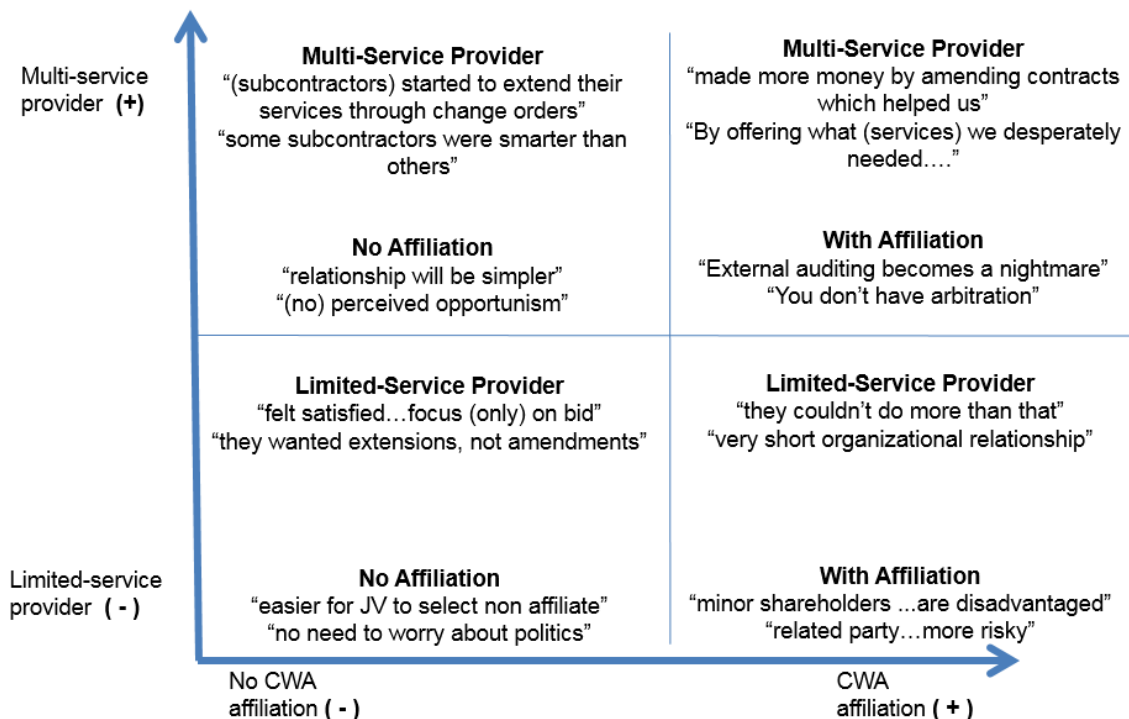
Figure 3 – Hypothetical Matrix Indicating Service Scope and Affiliation Level with Case Study Subcontractors



DISCUSSION

This paper explored subcontractor selection strategies employed by many MNCs who may be aligned with others for the sake of increasing market share or further developing some aspect of their business in a particular geographic region. This study contained two multinational corporations aligned in the oil-gas industry with stakes in a joint venture utilizing related and unrelated subcontractors who differed in the scale and scope of services offered. Utilizing qualitative interview data, this study revealed four types of subcontractors employed by these companies while engaged in oil/gas discovery. These subcontractor types were subsequently placed into quadrants whose X-axis was the subcontractor’s degree of interfirm affiliations and whose Y-axis detailed the subcontractor’s service scope. From the interview transcripts and coding, comments addressing each subcontractor continuum were placed in each quadrant. These comments and associated quadrants can be viewed in Figure 4.

Figure 4 – Quotes Supporting Theoretical 2x2 Matrix Construction



A subcontractor wishing to conduct business with an organization (or its subsidiary) who is also aligned in some fashion with the subcontractor presents a gambit of issues for project managers to overcome and resolve. Those issues deal with partner perceptions, partner trust, external auditing, managerial approval, board room transparency, product (or service) quality, political posturing and decision ambiguity. While it may be necessary for subcontractors to align with other entities for various reasons (Bandfield, et al., 2003) it may also present obstacles to efficient project execution (Mbachu, 2008).

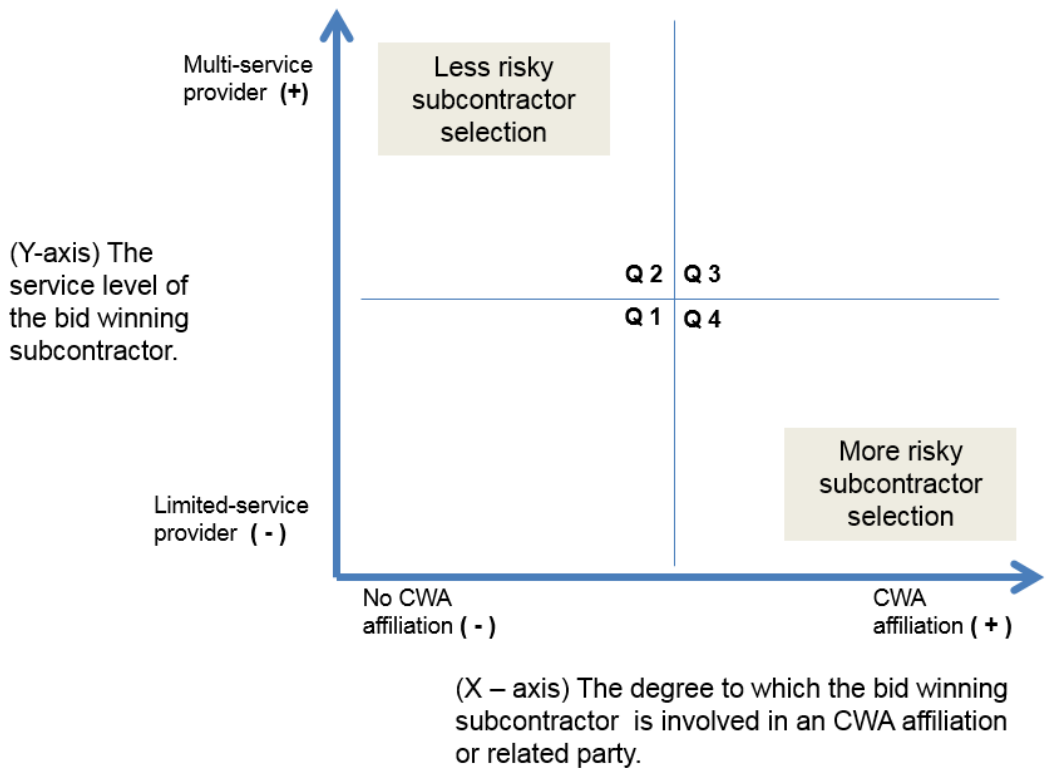
Subcontractors who offer a limited scope of services should also be examined thoroughly if the main contractor desires flexibility and speed in executing projects. While price seems to be the prevailing criteria for subcontractor selection (Hartmann, et al., 2009) thus producing "low-ball" bidding phenomena, many projects have suffered due to bid-winning subcontractor incompetence, lack of abilities, quality of service, and technical know-how (Kumaraswamy & Matthews, 2000). Previous investigators have cautioned against subcontractor selection based on price alone (Mbachu, 2008) and we wish to add to the rather lengthy list of subcontractor selection criteria referenced in Boer, et. al, (2001) and Bhutta & Hug (2002) by adding subcontractor interfirm affiliations and scope of services.

Considering the work of previous researchers and the participant statements within this study, subcontractors who hail from Quadrant 2 (multi-service with no interfirm affiliation) seem to be a prudent choice. These subcontractors side-step the administrative burdens and relationship detractors of those affiliated within an interfirm relationship whilst simultaneously offering services that may be keenly needed at inopportune project crises. This ability further endears that subcontractor to the main contractor and could conceivably improve project success outcomes.

By contrast, this is not to suggest that subcontractors in either quadrant 1 or 3 would not perform suitably. “Subcontractor A” is a multi-service subcontractor with interfirm relations. Comments from an interviewee regarding quadrant 3 make it clear that in some instances a subcontractor with interfirm affiliations and various service offerings can perform admirably. This is perhaps due to the subcontractor’s scope of service compensating for any complications imposed by the affiliation. The subcontractor’s capability of multi-service offerings perhaps helps to form a deterrence mechanism by which the subcontractor will not risk destroying the relationship with the company through exploitation of his or her current interests. Stated differently, a multi-service offering may mitigate the risks of a shortened focus on the part of the subcontractor. Additionally, there are subject matter expert subcontractors (Hoban and Francis, 2003; Street & Cameron, 2007) who avoid alliances and perform very well in the limited services they offer (quadrant 1).

However, given the preponderance of warnings and caution from our interviewees and in consideration of their immense contract governance experience, we believe prudent project managers should consider those risks when engaging subcontractors who may be affiliated and offer limited service types. In summary, from the interview transcripts and coding, less risky and more risky selection quadrants appear which seem to offer advice to project managers when engaging in subcontractor selection. These quadrants and their proposed risk factors can be seen in the figure 4 below.

Figure 5 – Proposed Subcontractor Selection Matrix



As an aid to practitioners mindful of this study whilst engaging subcontractors, we offer the following table in hopes of assisting the selection process and avoiding unnecessary project risks. In addition to the usual elements found in the subcontractor prioritizing model - the technical and financial capability of the subcontractor; the planning details of the proposal at hand (cost, duration and quality); and the likelihood of project success determined from the subcontractor's past performance, we suggest these clarification questions regarding interfirm affiliation and service scope (as presented in Table 1) be added to the main contractor's request for proposal (RFP). These questions should be seriously considered when evaluating a subcontractor's quote – whether it be a “low-ball” bid or not.

Table 1

RFP Primary Question	Response and Follow-up Questions
<p>Q1: Is your company affiliated with any organization, service partner or stakeholder who maintains stakes in this project?</p>	<p>If No, then go to Q2.</p> <p>If Yes, then:</p> <ol style="list-style-type: none"> 1) Please explain your arrangement in both legal and operational terms with each affiliate identified. 2) Please identify your vested interests, the length of time with this affiliate, and degree of ownership (one party to another)? 3) Describe, if any, conflicts of interest you have experienced in the past with this affiliate or potentially could experience in this project. <p>Please proceed to Q2</p>
<p>Q2: Is the primary service-contract you are bidding on in this RFP the sole (or primary) service offered by your company?</p>	<p>If Yes, then go to Q3</p> <p>If No, then</p> <ol style="list-style-type: none"> 1) Please list and explain your service offerings 2) Based upon revenue and time respectively, what percent of each service offering comprises the entirety of your service offering? 3) Please state in months/years the amount of time you have engaged in each service offering <p>Please proceed to Q3</p>
<p>Q3: When considering your past projects in which you engaged in delivering this specific service as a sub-contractor, what is the percentage of that total in which you satisfied the:</p> <ul style="list-style-type: none"> • conditions • goals • schedules • budgets • quality constraints of your main contractor? 	<p>Provide testimonials and contact information from past main-contractors when reflecting on your performance for the specific service offering currently under consideration.</p>

CONCLUSION

Although qualitative research reflects phenomena not captured by quantitative data; some scholars prefer this method of research. As such, this study can be extended by surveying project managers, using a pertinent sample with quantitative data captured through the use of project health indicators and overall project satisfaction surveys similar to the Project Health Check developed by Jaafari (2007) and empirically studied by Almahmoud, et al. (2012). Additionally, our research required respondents to recall historical experiences. Some of these events transpired between four and eight years ago. We recognize that our data may be compromised by the effects of time on memory. However, while some researchers prefer to interview participants in the “midst of the storm” or while the emotions are fresh to ensure accuracy and prevent constructive memory (Folkman and Moskowitz, 2004), others prefer historical accounts based on the benefits of “hindsight”. These benefits are predicated on the assumption that participants are removed from the emotional upheaval of the moment and have the advantage of time to see the entire event, from beginning to end, and reflect upon it. Additionally, emotions of the moment can be blinding to the truth and prevent accurate descriptions due to a lack of complete knowledge or “how the story ends” (Folkman & Moskowitz, 2004).

Although this research examined the effects of hundreds of contracts worth millions of dollars between multinational corporations (and their subsidiaries), the focus centered on one industry (oil and gas) and the relationships between two very large multinationals. Therefore the generalizability may be questioned. Secondly, we relied on qualitative data based on semi-structured interviews with managers who had extensive knowledge of subcontracting practices and the parties involved. Interviews are known to rely on personal opinions and therefore are susceptible to biases. We accounted for this by asking conceptual questions on either end of the studied continuum and avoided direct questions regarding specific contracts or subcontractors but allowed specific subcontractors to be mentioned and elaborated upon as interviewees cited examples through the course of the discussions.

The aims of this paper were to examine two factors when engaged in the selection of subcontractors. Those factors were: a) what effect can an affiliated subcontractor have on project outcome? and b) what impact does the subcontractor’s level of service scope have on project execution? Recognizing Figure 5 again, specifically quadrants 3 and 4, main contractors may wish to avoid the complexity surrounding subcontractors who are aligned in some fashion within an interfirm relationship. These managerial-challenging complexities may: damage partner trust from a perceived imbalance of power; require political posturing or bureaucracy navigation to gain management approval from interested stakeholders; reduce complaint options for product or service quality discrepancies; complicate external auditing transparency and obfuscate decision making processes. Hence, from a practitioner’s perspective, selecting affiliated subcontractors seems to be ill-advised.

Subcontractors who offer a limited service scope (as conceptualized in Figure 5 - quadrants 1 and 4) present their own challenges and occupy the second study focus. Many projects have failed to reach their goals or potential through subcontractor incompetence, quality of service, technical knowledge or insufficient subcontractor ability. Main contractors require subject matter expertise from subcontractors for successful project execution. However the need for subcontractors, who offer a wide range of services, can help lessen administrative burden while also improving speed to completion when unanticipated problems arise. Subcontractors who offer multiple services strengthen their relationship with the main contractor and vice-versa. Through service scale and scope, main and subcontractors build mutual trust for future endeavors. An additional sub-interest of subcontractor service-scope was the impact of “low-ball” bidding tactics. Considering transaction

cost economics and the need to lessen activity costs for successful project execution, many main contractors heavily weigh a proposal's cost component in making their subcontractor decisions. Based on the work of several researchers, Enyinda, et al. (2011); Doloi, (2009); Singh & Tiong, (2006); and Elitzur & Falk, (1996), this practice can produce tremendous project risks resulting from subcontractor incompetence; inferior service or product quality; subcontractor inadequate capacity; insufficient service-scope and even project abandonment. To conclude, multi-service subcontractors seem to offer an advantage over those of a limited-service variety and extreme caution should be exercised when dealing with subcontractors who have entered the relationship through low-ball bidding.

Finally, this research centered on two continuums which have not be examined in combination before. The theoretical model and discussion were grounded in the appropriate literature dealing with interfirm affiliations and subcontractor selection. These findings contribute to our understanding of subcontractor selection criteria by combining subcontractor interfirm alliances and scope of services as a dyad. First they reveal the importance of considering if a potential subcontractor is aligned with the main contractor through a MNC (or subsidiary thereof) and if so, what political, audit, financial, managerial, legal or perception risks may exist. Second, they reveal the importance of service scope offered by the subcontractor in mitigating the risks of the shortened focus of subcontractors, especially when flexibility, expeditious amendment approval, project urgency, partner familiarity and the establishment of a long-term business relationship are important. Subcontractors can play a significant role in successful project outcomes (Enyinda, et al., 2011) and based on this work, we believe the dyad of subcontractor interfirm relationships and service-scope offerings should be strongly considered.

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