

The Joint Task Scope in Offshore Outsourcing:

A Contract Manufacturer's Perspective

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Abstract

Learning from partners has been a strategic issue in alliance management. Prior research on partner learning suggested participating joint task as the most effective way to acquire knowledge from partners. Existing literature on offshore outsourcing relationships has paid attention to the competence erosion problems for sourcing firms. However, little is known about how offshore contract manufacturers could induce broad scope of joint tasks with sourcing firms to get access to proprietary knowledge of the sourcing firms.

Adopting both lenses of transaction costs economics and relational view, this study suggests that both idiosyncratic assets committed and relational capital cultivated in the international outsourcing relationships contribute to the depth and breadth of joint task scope. We further test conceptual model by using a survey data of 110 dyadic outsourcing relationships between Taiwanese contract manufacturers and foreign sourcing firms in the IT and electronic industries. Empirical results show that cultivating a trusting relationship at all levels with the sourcing firms has a stronger impact on the joint task scope than any of the asset-specificity concepts, namely tangible, intangible, and site specificity. Different from prior research addressing possible hold-up risks induced by asset specificity, this study emphasizes the positive effects of relation-specific investments on partner learning and suggests that, instead of mere compliance, the level of relation-specific investments could be a strategic choice made by contract manufacturers. Such managerial implication is critical for resource-inadequate firms from emerging economies pursuing growth through participating in global supply chain network.

Introduction

In recent years, learning from partner has been a critical strategic issue in alliance management, and the view of partner learning has found its way into much of the academic literature (e.g. Hamel, 1991; Nobeoka et al., 2002). Prior research on partner learning has suggested that, to acquire knowledge from partners, participating joint task can be the most effective way as a working example is on site which usually facilitates tacit, proprietary knowledge exchange between partners (Szulanski, 1996, Sunaoshi et al., 2005). In today's offshore outsourcing business, however, such knowledge acquisition may take place for partners working in different locations as e-commerce and information communication technology (ICT) provides common platforms among firms in onsite and offshore locations to virtually work together and solve problem jointly (Kotabe et al., 2008a).

Despite the seemingly rich research on outsourcing, the extant literature focused either on domestic outsourcing such as Japanese auto makers and their suppliers (e.g. Dyer and Singh, 1998), or on the sourcing firms' concerns such as global outsourcing strategy (e.g. Quinn, 1999), global supply chain management (e.g., Berggren and Bengtsson, 2004), sourcing firms' performance (e.g., Murray et al., 2005) and so forth. Among few studies addressed partner learning within the context of offshore outsourcing has mainly focused on the competence erosion problems for sourcing firms (e.g. Kotabe et al., 2008b). Little is known about how the offshore contract manufacturers could facilitate learning from the sourcing firms through close collaboration.

To help fill the gap, this study adopts a contract manufacturer viewpoint to examine the determinants of the scope of joint tasks between offshore sourcing partners. As noted earlier, the broader the range of collaborative tasks becomes, the better the chances of partner learning will stand. As a result, this study tries to answer "what determines the opportunities of broadening the scope of collaborative tasks between offshore contract manufacturers and sourcing MNCs?" Adopting the combined lenses of transaction costs economics and relational view, this study suggested that both relation-specific investments and relational capital are essential for contract manufacturers to broaden the scope of joint tasks with sourcing MNCs. We tested our conceptual model by using a survey data of 110 dyadic outsourcing relationships between Taiwanese contract manufacturers and foreign sourcing MNCs. Empirical results largely support our arguments.

Theoretical background and hypotheses

Scholars proposed that outsourcing emerges as a response to the increasing competitive pressure at the end market by choosing to concentrate on its core competence while leveraging a partner's area of specialization (e.g. Quinn, 1999). To effectively govern the relationships, the transactions cost economics (TCE) suggested that relation-specific

assets involved in a transaction, i.e. asset specificity, are one of the major sources of friction (Williamson, 1985). However, recent studies suggested that such customized investments committed for a certain transaction may facilitate smooth coordination between trading parties (Morgan and Hunt, 1994), induce closer partnership (Dyer, 1996), contribute to information sharing and stability in relationship (Celly et al., 1999), and so forth.

In contrast, the sociological exchange literature, particularly the relational view arguments, emphasizes a firm's idiosyncratic linkage with other firms. The relational view argues that firms can improve their capability by carefully managing their relationships with suppliers, customers and other resource providers. The inter-organizational relation itself can provide a strategic source of efficiency and competitive advantage if managed appropriately (Dyer and Singh, 1998; Zaheer et al., 1998). Discussing inter-firm knowledge transfer, Szulanski (1996) evidenced that one of the major barriers to knowledge transfer between partners is a laborious and distant relationship between partners; whereas Uzzi (1997) found the "thick" information exchange in embedded ties. We thus incorporate the Relational View into this study to broaden our theoretical bases in addressing partner learning.

Asset specificity and joint task scope

Williamson (1991: 281) defined asset specificity as the degree to which an asset can be redeployed to alternative uses without sacrificing its productive value. We decompose asset specificity into three sub-constructs, namely *tangible specificity*, *intangible asset*, and *site specificity*. *Tangible specificity* refers to the degree to which the tangible equipment, such as computer hardware and manufacturing equipment, is dedicated to or tailored for the relationship. The investment of computer hardware, for instance, helps improve information processing and communication efficiency between sourcing MNCs and offshore contract manufacturers. The *intangible specificity* refers to the degree that the intangible investments, which enhance cross-functional interaction and integration between partners, are customized to the relationship. Finally, *site specificity*, in Williamson's term, refers to the extent of proximity of warehouse site to sourcing MNCs, which helps speed up order fulfillment and delivery.

Commonly observed joint tasks in offshore outsourcing include joint product design, global logistics arrangement, new product development, component design, cost-reduction projects, and so forth. To facilitate the proceeding of tasks smoothly between partners in disperse locations, certain architecture has to be in place (Sanchez, 1999). For instance, there is a strong need for convenient access of computerized database and software commonly shared between sourcing MNCs and offshore contract manufacturers. Obviously, investments such as EDI through webs of computer network and multitude of software applications help facilitate coordination within and between partners (Kotabe et al., 2008a), not to mention that a dedicated cross-functional team and managerial process specific to the partner can resolve

problems caused by geographic distance in the offshore outsourcing setting. In short, the afore-mentioned specific investments pave the way for joint tasks between partners in offshore outsourcing. Over time, the sourcing MNCs merely specify product performance and production scale requirements, the contract manufacturers would then use their technical expertise to fulfill the detailed design, engineering, and manufacturing work. It is thus reasonable to suggest that, other things being equal, the more a contract manufacturer invests relation-specific assets, the more likely that it will gain broader scope of collaborative tasks with sourcing MNCs.

H1a. Tangible asset specificity is positively associated with the scope of joint tasks between offshore sourcing partners.

H1b. Intangible asset specificity is positively associated with the scope of joint tasks between offshore sourcing partners.

H1c. Site specificity is positively associated with the scope of joint tasks between offshore sourcing partners

Relational capital and joint task scope

In contrast to TCE, relational view argues for a more crucial role of social governance in relationships (Granovetter, 1985; Dyer and Singh, 2008; Carson et al., 2006). Prior research has shown that inter-partner trust has a strong association with the high performance of suppliers, such as competitive pricing, high quality supplies, timeliness of delivery, and flexibility (Zaheer et al., 1998). Regarding learning in alliances, Dyer and Chu (2000) proposed that goodwill and trust between partners may facilitate know-how transfer across organization boundaries. Kale et al., (2000) also suggested that the existence of relational capital, which refers to the level of mutual trust, respect, and friendship arising out of close interactions between partners, both at the individual and the firm level, leads to belief that knowledge leakage can be prevented between partners. In other words, relational capital may resolve the dilemma faced by sourcing MNCs regarding how to provide necessary knowledge and simultaneously protect themselves from losing their own proprietary assets or capabilities. Thus, since the existence of relational capital will enable both sourcing MNCs and contract manufacturers to benefit from a wide array of joint tasks, it is thus naturally to suggest:

H2. Relational capital is positively associated with the scope of joint tasks between offshore outsourcing partners.

Method

Data and sample

This paper chooses the Information Technology (IT) and electronics industries in Taiwan as our empirical setting. Due to the urging global demand for IT and electronic

products during the past decades and the rising wave of strategic outsourcing, Taiwanese contract manufacturers have successfully acquired the lion's share of the global electronic product output (Ernst, 2000). This industry landscape therefore provides a rich context for accessing offshore outsourcing relationships from the contract manufacturer's side.

The data were collected through a questionnaire mailed to 286 Taiwan electronic product manufacturers that offer large-scale manufacturing services to their foreign industrial buyers. The sampling frame was compiled from two different sources: the Directory of Major Companies of Information Industry in Taiwan published by the Institute of Information Industry (III), and a supplier list compiled by International Sourcing Center (ISC) of Taiwan External Trade Development Council. Each informant was asked to complete the survey questionnaire with reference to a self-selected foreign sourcing firm of significant importance to his/her firm. Follow-up phone calls were made extensively to make certain that even multiple questionnaires were collected from the same firm, they indeed reflected scenarios corresponding to different foreign buyers. Subject firms in the sample were also checked to assure their function as production houses instead of distributors. As a result, 119 completed questionnaires were returned (i.e., 41.6% response rate). The response rate is much higher than those found in previous research using survey data to examine inter-organizational relationships (e.g., Young-Ybarra and Wiersema, 1999). Nine questionnaires were then eliminated due to substantial missing data on key construct items, resulting in 110 cases for subsequent analyses.

The profile of respondent firms is sufficiently diverse in terms of product type and firm size. Regarding product types, 23.3% of the sample firms focuses on peripherals such as CD-ROM and scanner, 19.3% desktop and notebook PC, 15.2% network/multimedia card and motherboard, 15.2% semiconductors, and 10.4% components like connectors, LCD and PC case. In addition, the sample is composed of companies with annual sales turnover ranging from US\$6 million to US\$5 billion. The number of employees ranges from 69 to 35,000, with an average of 3,202. Of the respondents in this study, 21% are top executives and 67% are division directors. Further investigation into the characteristics of sample firms, using criteria like sales volume, number of employees, and product types, revealed no significant differences between the respondent and non-respondent firms. Hence the non-response bias is not a concern here.

Measures

Most of the questionnaire items in this research are based on 7-point Likert-type scales, ranging from 1= "strongly disagree" to 7= "strongly agree", except firm size and duration variables. We generated multi-item scales based on previous related research and made some adaptation following field interviews with marketing managers of five contract manufacturers, who served as the pilot sample for pre-testing purpose. The scope of joint tasks is measured

by both manufacturing and managerial activities, such as product design, production cost reduction, personnel training and so on. The four measurement items are adapted from Heide and John (1990). The composite reliability is found to be satisfactory (see Table 1).

Table 1. Reliability and Validity of measures

Construct	Measurement Items	Standardized		
		factor loadings	Composite alpha	AVE
Tangible specificity	1. Dedicated production and testing equipment	0.62	0.794	0.614
	2. Dedicated IT hardware	0.93		
	3. Dedicated people	0.77		
Intangible specificity	1. Routines and processes especially adapted for the sourcing firm	0.53	0.729	0.611
	2. IT compatibility	1.08		
Site specificity	The degree of geographic proximity between warehouse location and sourcing firm	--	Single item	Single item
Relational Capital	1. Friendship with all levels of the sourcing firm's staff	0.65	0.802	0.592
	2. Reciprocity between partners	0.76		
	3. Trustworthiness felt in the relationship	0.88		
Scope of Joint Tasks	1. design new product jointly with the sourcing firm	0.68	0.805	0.523
	2. cost reduction project together with the sourcing firm	0.87		
	3. delivery system arranged jointly with the sourcing firm	0.64		
	4. personnel training jointly with the sourcing firm	0.68		

Asset specificity is decomposed into three sub-constructs: tangible, intangible, and site specificity. The first and the third types basically followed the concepts of dedicated specificity and site specificity suggested by Williamson (1985). Intangible specificity emphasized the importance of IT software and managerial routines/processes compatible with the sourcing firms. As to relational capital, three measurement items are drawn from Kale et al. (2000) and Zaheer et al. (1999) to capture the degree of: (1) reciprocity; (2) trustworthiness;

and (3) friendship with all levels of the sourcing firms. Table 1 shows all the detailed measurement items, standardized factor loadings, composite reliability and AVE of the constructs.

Control variables include the length of relationship and firm size. Length or duration of the relationship was operationalized as the number of months since the contract manufacturer first began supplying components or products to the sourcing MNCs. We include the control variable because it could be argued that the longer the duration of the alliance, the greater the chances to have a broader scope of joint tasks between partners. In addition, the size of contract manufacturers is added as a control variable, using the logarithm of annual sales as a proxy.

Analysis

The measurement validation process began with calculating item-to-total correlations to identify items that do not pertain to the designated construct. The constructs are shown to exhibit satisfactory levels of reliability as indicated by composite reliabilities (Cronbach alpha) ranging from 0.729 to 0.805. The convergent validity of the measurement scales was examined through the confirmatory factor analysis (CFA). As to item validity, the assessment of measurement model is made by checking the standardized factor loadings, which ranges from 0.70 to 0.87. As suggested by Bollen (1989), measurement validity can be assessed by examining the size and statistical significance of the direct structural standardized coefficients of observed measures and their associated latent variables. Thus, the factor loadings, which are all bigger than 0.5, can be interpreted as validity coefficients reflecting the degree to which the observed variables adequately measure the underlying construct. Descriptive statistics and correlations of constructs can be found in Table 2.

Table 2. Correlations and descriptive statistics

Variables	Mean	S. D.	1	2	3	4	5	6
1. Scope of Joint Tasks	3.888	0.887						
2. Relational Capital	4.004	0.475	0.449**					
3. Tangible specificity	4.527	1.349	0.475**	0.188*				
4. Intangible specificity	4.627	1.536	0.464**	0.146	0.427**			
5. Site specificity	5.900	1.226	0.326**	0.190*	0.446**	0.479**		
6. Firm Size	5.691	1.459	0.130	0.162	0.218*	0.077	0.141	
7. Duration	64.218	59.458	0.144	0.253**	0.161	0.181	0.237*	0.079

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

This research uses a hierarchical regression model to evaluate the hypothesized relationships. In the first step, length of relationship and firm size were entered as control variables. In the second step, the relational capital variable was entered. In the final step, the

three sub-constructs of asset specificity were included.

Results

Table 3 shows that, in the first step of the regression (Model 1), both control variables are positive but not significant in predicting the scope of joint tasks in outsourcing partnership. Model 2 seems to provide a fairly modest fit in terms of adjusted R^2 (0.183). Statistically, the model 2 improved with the inclusion of relational capital as the R^2 increased significantly. Relational capital is found to be a significant predictor of the scope of joint tasks ($\beta=0.432$, $p<0.01$). In model 3, it is clear that the hypothetical positive association between asset specificity and the scope of joint tasks generally holds, though not every sub-construct is statistically significant in the model. If we further combine asset-specificity and relational capital into Model 4, both the tangible and intangible asset specificity have a significant and positive impact on the joint task scope ($\beta=0.290$, $p<0.01$ & $\beta=0.297$, $p<0.01$ respectively); whereas site specificity is not a significant predictor. As predicted, the impact of relational capital is still positive and statistically significant in Model 4 ($\beta=0.365$, $p<0.01$). None of the control variables is found statistically significant in Model 4.

Table 3. Hierarchical regression analysis
(Dependent variable = scope of joint tasks)

Variables	Model 1	Model 2	Model 3	Model 4
Tangible specificity	—	—	0.321** (3.342)	0.290*** (3.294)
Intangible specificity	—	—	0.297*** (3.369)	0.297*** (3.369)
Site specificity	—	—	0.025 (0.249)	-0.002 (-0.021)
Relational Capital	—	0.432*** (4.770)	—	0.365*** (4.638)
Control variable block				
Firm Size	0.120 (1.255)	0.058 (0.657)	0.031 (0.371)	-0.011 (-0.143)
Duration	0.134 (1.409)	0.030 (0.334)	0.028 (0.329)	-0.048 (-0.611)
R^2	0.035	0.205	0.312	0.430
Adjusted R^2	0.017	0.183	0.278	0.397
R^2 change	0.035	0.171	0.107	0.118
F value	1.931	9.133***	9.413***	12.977***
Significance	0.150	0.000	0.000	0.000

Number of cases	110	110	110	110
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Notes: * $p \leq .10$ ** $p < .05$ *** $p < .01$

Conclusions

Existing literature on outsourcing has largely maintained a focus on the sourcing firms. This study aims to explore the factors contributing to a wide array of joint tasks in offshore outsourcing relationships, which is particularly critical for a contract manufacturer given its relative resource deficiency. In practice, it is not uncommon to find some small but willing to learn contract manufacturers evolving into multinational corporations (e.g. Acer and Samsung) (Hobday, 1998).

We conclude that, in offshore product outsourcing business, the advantage of external learning comes from the idiosyncratic linkages that contract manufacturers endeavored to establish with their sourcing MNCs. A straightforward way for a contract manufacturer to learn from partnership is to carefully choose world-class sourcing MNCs, foster strong ties at both individual and firm levels, and simultaneously make relation-specific investments with an intention to undertake deep and broad joint tasks with the MNCs. Overall, this study proposes a growth-oriented strategy for resource-inadequate contract manufacturers in emerging markets, which is largely ignored in extant outsourcing literature.

International and managerial implications

Two managerial implications can be derived from our findings. First, for contract manufacturers, cultivating a mutual-trusting relationship at all levels with foreign sourcing MNCs presents a major challenge if they aim to acquire information and knowledge from the partnership. Given the cross-border context of offshore outsourcing, the environmental complexity and culture differences may add difficulty to the challenge. However, without the relational governance that promotes trust and alleviates risk, the sourcing MNCs may withhold exchange of critical information or experience with their contract manufacturers by reducing the joint task scope (Oxley and Sampson, 2004). Thus, relation-building capability may thus be a strategic asset for contract manufacturers which needs to be accumulated en route to deeper global production networking involvement.

Second, this study suggests that the level of relation-specific investments made by contract manufacturers could be a strategic choice with a learning purpose, rather than a mere compliance to the request of sourcing MNCs. Since the investments contribute to the scope of joint tasks, the frequent interactions in joint tasks in turn lead to partner learning and justify the hold-up risks caused by asset specificity. This is critical for firms with limited resources in emerging economies pursuing internationalization through joining global sourcing network

and partner learning.

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