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Value Creation and Value Claiming in Strategic Outsourcing Decisions: A Resource Contingency Perspective[†]

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This study integrates the concepts of value creation and value claiming into a theoretical framework that emphasizes the dependence of resource value maximization on value-claiming motivations in outsourcing decisions. To test this theoretical framework, it develops refutable implications to explain the firm's outsourcing decision, and it uses data from 178 firms in the publishing and printing industry on outsourcing of application services. The results show that in outsourcing decisions, resource value and transaction costs are simultaneously considered and that outsourcing decisions are dependent on alignment between resource and transaction attributes. The findings support a resource contingency view that highlights value-claiming mechanisms as resource contingency in interorganizational strategic decisions.

Keywords: *strategic outsourcing decisions; resource contingency view; resource value creation; value claiming*

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Value creation and value claiming are two components of the firm's interorganizational strategy, where the former refers to the net rent-earning capacity of resources and the latter refers to the capability of firms to appropriate these rents. Although the combination of the two mechanisms accounts for the contribution to firm performance, interorganizational strategy models tend to have a one-sided focus on one of the two. Transaction cost economics (TCE), for example, is criticized for having a single-minded focus on the risks of opportunism and bounded rationality of contracting partners and neglecting the role of value creation in governance decisions (e.g., Madhok, 2002; Poppo & Zenger, 1998; Zajac & Olsen, 1993). Yet, Porter (1996) warns that the single-minded focus on creating value in practices such as outsourcing and benchmarking is an insufficient basis for strategic analysis if the firm cannot claim its share of the value. Thus, value creation and value claiming both deserve attention in interorganizational strategic decisions.

Outsourcing has become an increasingly important and complex interorganizational strategic decision area for firms in recent years (Hoetker, 2005). Outsourcing represents the fundamental decision to reject the internalization of an activity (cf. Gilley & Rasheed, 2000), and a variety of theoretical perspectives are applied to inform outsourcing decision making. Prominent among these theories is the resource-based view (RBV), which is applied to explain resource-based advantages in outsourcing decisions. According to the RBV, firms seek to obtain valuable, rare, nonsubstitutable, and difficult-to-copy resources and capabilities to earn above-normal rents (Barney, 1991). The RBV emphasizes the internalization of such resources because it assumes ownership (or at least complete control) as a necessary condition for appropriating rents (Lavie, 2006). However, firms are increasingly outsourcing valuable and difficult-to-replicate business functions, such as R&D, product design, and IT services. In response, a range of authors view access, rather than ownership or control of resources, as being central to firms' strategies (see Borys & Jemison, 1989; Coombs & Ketchen, 1999; Das & Teng, 2000; Dyer & Singh, 1998; Hamel, 1991). However, access to resources in absence of ownership or control of resources does raise the question of how value-claiming concerns are addressed.

Scholarly research predominantly applied TCE to explain value-claiming concerns in outsourcing decisions and identified several factors that affect a firm's vulnerability to bounded rationality and opportunistic behavior in outsourcing relationships, such as asset-specific investment, uncertainty, and performance measurement (e.g., Holmstrom, 1979; Oxley, 1997; Pisano, 1990). In recent years, TCE explanations of outsourcing decisions are combined with arguments from the RBV (e.g., Holcomb & Hitt, 2007; Mayer & Salomon, 2006; McNally & Griffin, 2004), and new concepts are developed that conceptually merge arguments from RBV and TCE, such as core specificity (Barthélemy & Quélin, 2006). These studies typically demonstrate the complementarity of the resources and transaction cost perspective (Mahoney, 2001), or they examine how internal (transaction) capabilities influence governance decisions (e.g., Mayer & Salomon, 2006). However, these studies do not address the issue how resource value creation may be influenced by value claiming mechanisms.

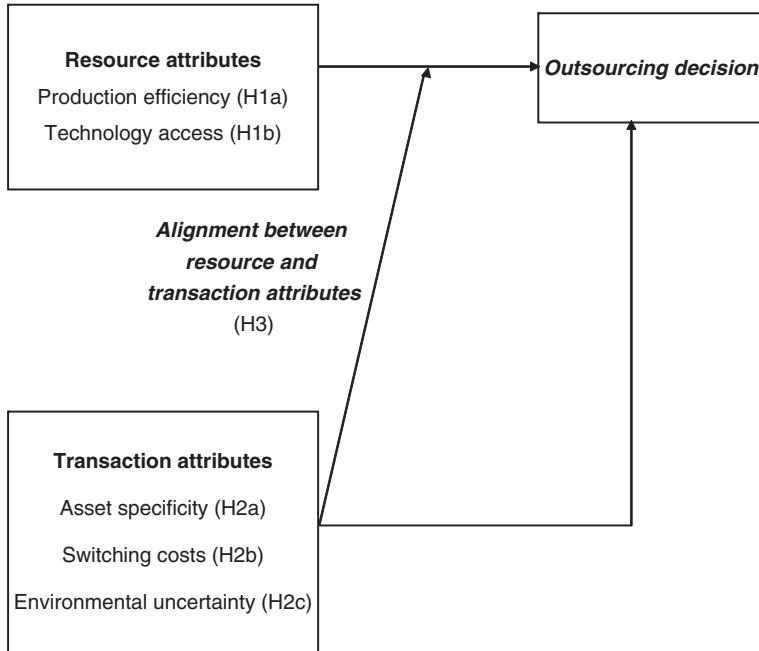
Recent scholarly work introduced the notion that resource value is not independent of the specific context in which the resources are deployed (e.g., Brouthers, Brouthers, & Werner, 2008; Oliver, 1997; Priem & Butler, 2001). Brouthers et al. (2008) conceptually and empirically

demonstrate this approach by showing that resource-based advantages are dependent on country-specific institutional mechanisms in entry mode decisions. Resources and capabilities are aligned with a country-specific context, and when resources and capabilities are transferred into a different context, they need to be realigned with that context.

In the present article, we aim to advance this perspective by showing that the firm's capability to create value needs to be aligned with value-claiming mechanisms (transaction attributes), even within a single country-specific context. We examine how strategic outsourcing decisions should take into account the value creation potential of unique resources provided by other firms, as well as how such resource value creation is aligned with value-claiming motivations in outsourcing relationships. With this approach, we aim to contribute to theory development in several ways. First, this approach allows us to explore the impact of exploitation risks on value creation processes, which informs theory on a largely unexplored resource contingency factor in interorganizational strategies. Second, the framework allows us to test alternative theoretical explanations. For example, a fundamental relationship of the TCE framework is the relationship between asset specificity and vertical integration. There is considerable empirical support for this relationship; however, several scholars suggest that the relationship can be explained by the internal efficiency gains of human resource specificity rather than by increased transaction cost efficiency (Carter & Hodgson, 2006; Masten, Meehan, & Snyder, 1989, 1991; Monteverde, 1995; Monteverde & Teece, 1982). This controversy raises serious doubts about the validity of the TCE framework. The proposed framework allows us to examine the effect of asset specificity while controlling for production efficiency effects. Finally, interorganizational constraints on value creation are particularly important for firms that need to adapt, enhance, or reconfigure their internal resource bases (Helfat et al., 2007). Examining the interdependence between resource and transaction attributes is therefore important for the development of the conception of strategic outsourcing decisions as building blocks of dynamic capabilities (Teece, 2007).

The article proceeds as follows: First, we explain the theoretical underpinnings of our framework, and we develop refutable implications for outsourcing decisions. Subsequently, we discuss the method and data collection. In our empirical application, the theoretical framework is used to uncover the decision calculus behind the strategic decision to outsource application services of firms in the publishing and printing industry. We have selected this outsourcing context because in it, application services are highly firm specific and difficult to replicate (Heart & Pliskin, 2002) and adaptive coordination routines between buyer and provider are highly explicit, which allows us to make specific predictions about the relationship between environmental uncertainty and the outsourcing decision. Next, we present the results. We find that resource access and transaction cost motivations simultaneously play a role in outsourcing decisions, with resource access having on average a dominating impact. We also find that the impact of resource attributes is context dependent on value-claiming mechanisms and that alignment between resource attributes and transaction attributes is an important factor in outsourcing decisions. The final section discusses the contributions and implications of the study and provides outlines for future research on resource contingencies and outsourcing decisions.

Figure 1
A Resource Contingency Model of Resource and Transaction Attributes in Outsourcing Decisions



Value Creation and Value Claiming

The RBV of the firm conceives firms as bundles of productive resources, with different firms having different bundles of these resources (Barney, 1991; Conner, 1991). Some of these resources are either rare or costly to copy, and outsourcing provides opportunities to gain access to these valuable resources. Thus, in general, we expect that the starting point of any outsourcing decision is the search for value-creating resources (Das & Teng, 2000; Lippman & Rumelt, 2003). Firms also have a value-claiming motivation, one emphasized by transaction cost theory. According to the logic of TCE, the transaction partners have incentives to claim value by using postcontractual power (small-numbers bargaining) or the threat to terminate the contract (holdup). TCE studies the impact of these value-claiming mechanisms while holding constant the value gains from the relationship. However, firms might be motivated to create resource value and accomplish value claiming at the same time, and these components of strategic outsourcing decisions may be correlated (Foss & Foss, 2005; Zajac & Olsen, 1993). In the following section, we discuss outsourcing as a source of resource value creation; then, we shift our attention to the transaction costs considerations that may play a role in claiming that value. In a final section, we explore how resource and transaction attributes interact in outsourcing decisions. In Figure 1, we summarize the relationships hypothesized in the next section.

Outsourcing Decision and Value Creation

According to the RBV of the firm (Barney, 1991; Conner, 1991), firms seek to attain (and at times control) idiosyncratic or costly-to-copy resources and capabilities; as such, resources expand the scope of the value-creating activities under consideration. The traditional RBV focused on intrafirm resources because it assumed ownership or at least complete control of resources as a necessary condition for appropriating rents (Lavie, 2006). However, access to resources through outsourcing strategies may create value through different mechanisms. First, outsourcing may extend the firm's value creation opportunities by supplementing internal resources that are more costly to develop internally (Barney, 1991). If deficits in resources and capabilities are diagnosed, outsourcing may become the more efficient way to gain access to these resources (Grant, 1991; Teece, Rumelt, Dosi, & Winter, 1994; Teng, Cheon, & Grover, 1995). Second, new resource combinations can generate synergy with internal resources, which creates more value (Dyer & Singh, 1998). Finally, internal resources can be enhanced by external resources. For example, firms may gain access to the outsourcing partner's knowledge (Norman, 2004), thereby increasing internal learning, experience, and skills (Argyres, 1996), which in turn may lead to an increase in production efficiency that is difficult for competitors to imitate. Therefore, the production efficiency advantage may be an important driver of outsourcing decisions.

Hypothesis 1a: The ability to gain a production efficiency advantage is positively related to the firm's outsourcing decision.

However, survival of the firm in the long run depends not only on the efficiency of production but also on the ability of the firm to establish a resource base from which it can adapt and extend its operations in an uncertain and changing world (Helfat et al., 2007) and thereby maintain or improve its production efficiency in the future. Some firms appear to possess a dynamic capability that gives them a comparative advantage in developing new processes or products (Lockett & Thompson, 2001). Such dynamic capabilities are also firm capabilities and are therefore part of the resource base of the firm (Barney, Wright, & Ketchen, 2001). Penrose (1960) illustrates this point with respect to technology, in a case study of the Hercules Powder Company. Its extensive technology base leveraged a strategy of moving into developing markets, which in turn led the firm to invest further in the advance of technology. Putting it in terms of the more recent dynamic capabilities literature, unpredictable contingencies require flexible capabilities that permit rapid response, and such capabilities require a broad and deep knowledge base (e.g., technological, market, product) to devise appropriate responses (Volberda, 1998: 108). Outsourcing provides access to a broader range of specialized and advanced technology, by making new and sophisticated technology available to enterprises that could not otherwise afford such a broad and deep knowledge base (Dyer & Nobeoka, 2000; Quinn, 2000; Teece, 2007). This allows the firm to increase its capacity to create, extend, or modify its resource base, thereby supporting a dynamic capability for the outsourcing firm, which allows it to create value in the future.

Hypothesis 1b: The ability to access external technology resources is positively related to the firm's outsourcing decision.

Outsourcing Decision and Value Claiming

According to TCE, firms will choose a governance mechanism that will govern their transactions effectively at the lowest possible cost (Coase, 1937). Williamson (1985, 1991, 1996) argued that the transaction costs resulting from the risks of opportunism and bounded rationality form the major component of transaction costs and, hence, the major determinant of governance choice. Such transaction costs have particular importance in situations where firms make asset-specific investments—that is, investments that are to some extent specific to an exchange. Specific assets include dedicated equipment, operating procedures, skills, and know-how tailored for the use of a specific organization (Ang & Straub, 2002). Because contractual agreements can never be complete, asset specificity causes dependence between the exchange partners, and this contractual uncertainty makes the outsourcing firm vulnerable to the opportunistic behavior of exchange partners. Safeguarding against such behavior would result in significant transaction costs.

However, several authors suggest that human-specific assets increase internal efficiency rather than reduce transaction costs efficiency, as predicted by TCE (e.g., Carter & Hodgson, 2006; Masten et al., 1989, 1991; Monteverde, 1995; Monteverde & Teece, 1982). This resource-based reinterpretation of the asset specificity–vertical integration relationship does not deny the empirical validity of the relationship; rather, it provides an alternative theoretical explanation. If the behavioral assumptions of the TCE framework—the risks of opportunism and bounded rationality—are incorrect, then asset specificity should have no effect beyond the efficiency gains of outsourcing. Our combined RBV–TCE framework developed in this study therefore allows us to test the relationship between asset specificity and the firm's outsourcing decision, controlling for the efficiency gains of outsourcing.

Hypothesis 2a: Asset specificity is negatively related to the firm's outsourcing decision.

According to transaction cost theory, the flexibility of a governance mechanism is an important consideration because incomplete long-term contracting will fail to anticipate and/or make correct provision for future contingencies (Williamson, 1999: 1100). Transaction costs associated with economic exchange include ex ante and ex post costs, where the latter include the opportunity cost of not shifting to more profitable activities in the light of new information (Rindfleisch & Heide, 1997). Earl (1996), for example, shows how unforeseen changes in business strategy can have a significant impact on the requirements of business functions and how, consequently, it may be difficult to adjust contractual agreements accordingly. Furthermore, when a firm seeks to outsource activities, it can never be absolutely sure that the provider's skills will stay current or superior in meeting the firm's future needs (Barthélemy, 2001). If the costs of switching to an alternative supplier are high, firms will incur high transaction costs in changing exchange partners, thus reducing their strategic flexibility. Thus, we hypothesize that the presence of high switching costs will reduce the strategic flexibility of outsourcing firms and will therefore be negatively related to the firm's outsourcing decision.

Hypothesis 2b: Switching costs are negatively related to the firm's outsourcing decision.

According to TCE, a fundamental problem of organizations is how to cope efficiently with an unpredictable environment when organizing transactions (Williamson, 1999). Firms will prefer those governance forms that by approximation have the highest level of comparative adaptive coordination efficiency to unexpected future contingencies. Firms can choose to bring resources under their own control and execute the transaction under hierarchical governance, or they can realize access to resources through hybrid governance, such as outsourcing relationships, where external resources and capabilities become available to outsourcing partners without the formal transfer of ownership. The starting point of TCE is that internal organization costs unavoidably attend the decision to take a transaction out of the market; therefore, firms are advised to take transactions out of the market for only compelling reasons (Williamson, 1985). The compelling reason proposed by TCE is adaptive coordination efficiency. Hierarchies are assumed to have superior adaptive coordination capabilities, when compared with market governance arrangements (Williamson, 1991), and so contracts within firms can be more incomplete than those between firms. Adaptive coordination within firms is more efficient because (a) proposals to adapt require less documentation, (b) resolving internal disputes by fiat rather than arbitration saves resources and facilitates timely adaptation, (c) information can more easily be accessed and more accurately assessed, (d) internal dispute resolution enjoys the support of informal organization, and (e) internal organization has access to additional incentive instruments that promote team orientation (Williamson, 1991: 280). Adaptive coordination of hierarchical governance may be efficient in the context of the transfer of tacit knowledge and higher-order routines, such as the nontradability of knowledge assets (Kogut & Zander, 1992) and the high costs of writing explicit contracts over tacit knowledge routines (Williamson, 1991: 280). Hierarchical governance can efficiently enforce implicit elements of contracts, using the internal norms and conventions that emerge from continued interaction among employees. Overall, TCE provides strong arguments that adaptive coordination of tacit and higher-order routines is more efficient within firm boundaries than between firm boundaries, thereby leading to the proposition that environmental uncertainty is positively related to internal modes of governance.

Empirical results on this relationship offer mixed results (e.g., Carter & Hodgson, 2006; David & Han, 2004). However, few studies take into account the implicit/explicit nature of the adaptive coordination mechanism mentioned above. The critical dimension will be the capability of transaction partners to adjust contractual provisions in response to unexpected environmental change. If cross-boundary adaptation routines are complex and implicit, then adaptive coordination is extremely difficult—particularly if time constraints apply, such as in many service firms (Brouthers & Brouthers, 2003). However, if cross-boundary adaptive coordination routines are explicit—that is, if there is explicit description of the parties' roles, ownership, responsibilities and contingency planning (Argyres & Mayer, 2007)—contractual agreements are less likely to require renegotiation, and governance choice may be determined by a trade-off between external transaction costs and internal transaction costs (organization costs) (Hennart, 1994). Internal organization costs tend to increase in an uncertain environment. The costs associated with adjusting internal staffing levels can be substantial (Abraham & Taylor, 1996), and markets have an incentive advantage in responding flexibly to environmental changes (Williamson, 1985); however, within firms, strong market signals about new developments may be less likely to reach critical decision makers (Lacity & Hirschheim,

1993). Therefore, environmental uncertainty will be positively related to outsourcing if the cross-boundary function is managed by explicit adaptive coordination routines.

Hypothesis 2c: In the context of explicit cross-boundary adaptive coordination routines, environmental uncertainty is positively related to the firm's outsourcing decision.

Alignment Between Resource and Transaction Attributes

According to the Coase theorem (1937), all the value that can conceivably be created from exchange will in fact be created in the absence of transaction costs. However, in a world with positive transaction costs, the firm's capability to create value from resources might be constrained (Foss & Foss, 2005; Mahoney, 2001). Value creation can best be deployed if there is an alignment between resource attributes, transaction attributes, and governance structure (Lockett & Thompson, 2001; Madhok, 2002). When faced with a high risk of exploitation by transaction partners, firms will find it harder to exchange information, transfer knowledge, and set up processes that facilitate joint value creation. For example, Luo (2002) reports that the impact of affective cooperation on international joint venture performance in China increased if a contract was more specified and if it contained more contingency terms. This effect is augmented by the fact that the majority of interfirm information and knowledge sharing is at the middle level of management rather than at the executive level, which designs the cooperative mechanism (Barringer & Harrison, 2000; Hamel, Doz, & Prahalad, 1989). Young-Ybarra and Wiersema (1999) argue that when the firm's knowledge base is highly specific, it will lead to constrained knowledge exchange with outsourcing partners. Verwaal, Verdu, and Recter (2008) find that in the context of unbalanced asset-specific investments, the resources of one outsourcing partner are more vulnerable to opportunistic exploitation, which reduces trust, knowledge exchange, and organizational learning in outsourcing relationships. Evidence for this pattern is reported in the context of close business relationships characterized by a high level of trust (E. Anderson & Jap, 2005), thus suggesting that even in close and high-trust business relationships, firms face the risk of exploitation by transaction partners.

The risk of exploitation can effectively lessen the value of external resources in outsourcing relationships, particularly if new resource combinations have to generate synergy between internal and external resources (Dyer & Singh, 1998) or if external resources should enhance internal resources (Argyres, 1996; Kogut, 2000; Norman, 2004). Under such conditions, the value loss resulting from the risks of opportunism exceeds the value loss of redeployment of asset-specific investments that firms put at risk in exchange relationships. This additional value loss can be considered a hidden source of transaction costs, and it is a consequence of the misalignment between resource and transaction attributes. Thus, alignment of transaction attributes with resource attributes may influence the capabilities of firms to create value from external resources; therefore, it influences the firm's outsourcing decision. Based on the alignment proposition, we formulate the following hypothesis:

Hypothesis 3: There will be a stronger positive relationship between resource attributes and the firm's outsourcing decision when transaction costs are low.

Method

We choose to study the outsourcing decision of application services in the publishing and printing industry in our empirical application because application services play an important role in the value creation processes for these firms. According to the Application Service Provision Industry Consortium, an application service provider (ASP) “manages and delivers application capabilities to multiple entities from a data centre across a wide area network” (Smith, 2002: 451).

Application services include application hosting, network management, and technical support. The development of standard communication protocols has spurred the interest in outsourcing application services (Hagel & Brown, 2001). These standards have created an open network environment in which firms can outsource application services and leverage application services in which they have a distinctive capability (Amit & Zott, 2001; Quinn, 2000).

In the ASP context, the provider manages a highly specialized, complex, and difficult-to-duplicate ASP value chain network (Heart & Pliskin, 2002). In contrast to services in general, which tend to be inseparable and perishable (Brouthers & Brouthers, 2003; Gummesson, 2007), the open network environment does not require the ASP to be present at the moment of the application services’ use; it allows the ASP to separate production and use of application services. This trend in application services reflects a more general trend in the services industry, where technology has become powerful enough to industrialize service operations (Gummesson, 2007) and thereby blur the traditional differences between goods and services (Vargo & Lusch, 2004). This mass-customized service provision model manages adaptive coordination between user and provider by a service-level agreement, which explicitly describes the parties’ roles, ownership, responsibilities, and contingency planning. Thus, the ASP industry offers the opportunities of location-independent exchange of specialized and unique resources and capabilities coordinated by highly explicit adaptive coordination routines. These characteristics make it an appropriate industry to test our theoretical framework.

Measurement

Independent variables. Resource attributes consist of different functionalities and services that can supply value to the firm. What are the resource attributes supplied by ASP? Given the literature (e.g., Ang & Straub, 2002; Dewett & Jones, 2001; Kern & Willcocks, 2000; Quinn, 2000; Smith, 2002) and in-depth interviews with IT managers, we conceive that production efficiency and access to application and network technology are possible resource attributes that may create opportunities for value enhancement of outsourcing application services, as compared with in-house service provision. ASP provides access to a broad range of specialized and advanced application and network technology, by making sophisticated application and network technology available to enterprises that could not otherwise afford such a broad and deep knowledge base (Quinn, 2000; Smith, 2002), thereby supporting a dynamic and flexible response capability in IT for the outsourcing firm.

In designing our questionnaire, we used scales from previous studies (e.g., Klaas, McClendon, & Gainey, 1999; Poppo & Zenger, 1998; Steensma & Corley, 2001) and

conducted in-depth interviews with IT managers working in the industry. Subsequently, we designed an initial questionnaire and pretested it with eight IT managers in the publishing and printing industry.

The data were gathered using a mail survey. A random sample of 917 firms active in the publishing and printing industry were contacted, based on a database of all firms registered by the Chambers of Commerce in the Netherlands. We sent out 917 questionnaires, then a reminder 5 weeks later. In total, 178 questionnaires were returned (19.4% response rate) and used for the study. The response was tested for representativeness with respect to size and industry characteristics, and a comparison did not indicate significant differences. Regarding the firm's intent to outsource application services, the procedure suggested by Armstrong and Overton (1977) was used. No significant differences were found on this key variable between early and late respondents.

The scale items were first factor-analyzed, using principal component procedures and varimax rotation. Next, the psychometric properties of the scales were investigated. By means of an exploratory factor analysis, we analyzed the different dimensions of the scales to assess their unidimensionality and factor structure. Items that did not satisfy the following criteria were deleted: Items should have communality higher than .30; dominant loadings should be greater than .50; cross-loadings should be lower than .30; and the scree plot criterion should be satisfied (Briggs & Cheek, 1988). These rules are often applied to factor analyses to refine scales (DeVellis, 1991). Of our 37 items, we removed 3 because cross-loadings were higher than .30. This resulted in a pool of 34 questions, which are listed in Table 1. Next, the reliabilities of the dimensions of each scale were assessed by means of the Cronbach alpha coefficient (also shown in Table 1). Following Nunnally (1978), it is desirable that measures of each dimension achieve an alpha greater than or equal to .70. In fact, as shown in the table, the alphas vary between .69 and .91, and the composite reliabilities vary between .67 and .88. Furthermore, Table 1 shows that items have correlations of .75 or more with their respective constructs, which suggests a satisfactory item reliability (Hulland, 1999).

We used confirmatory factor analysis with EQS 6.0 (Multivariate Software, Inc., Encio, CA) and maximum likelihood estimation to validate the scales resulting from the exploratory factor analysis. A satisfactory fit was achieved, $\chi^2 = 728$, $df = 466$, $p < .01$, root mean square estimated residual = .05, and comparative fit index = .93. The ratio of chi-square to degrees of freedom is 1.56; a value of less than 3.00 for the ratio indicates a good fit (Carmines & McIver, 1981). A comparative fit index value above .90 is considered to be an indication of good fit, and the root mean square estimated residual of .05 indicates good model fit because it does not exceed the critical value of .08 (Bentler & Bonett, 1980). The chi-square statistic was still significant, which is indicative of a poor fit. However, it is well documented that the chi-square is highly dependent on sample size (e.g., Jöreskog & Sörbom, 1993). Thus, following J. C. Anderson and Gerbing (1988), we considered the measurement model acceptable, given the other supportive indices.

Discriminant validity of the scales was further verified by comparing the shared variance between any two constructs and the average variance extracted from each construct (see Table 1). In all cases, the shared variance between two constructs was less than the variance extracted from each construct, thus supporting the validity of the measurement model (Fornell & Larcker, 1981); furthermore, none of the confidence intervals of the correlation coefficients between any two constructs contained 1.0 (J. C. Anderson & Gerbing, 1988).

Table 1
Items, Constructs and Measurement Model

Constructs	Item Correlation With Total Score	Factor Loadings
Outsourcing intent		
We intend to use ASP in our firm.	.89	.81
We will introduce ASP to our colleagues so that it can be used for the management of our IT infrastructure.	.90	.78
When we buy new applications, we consider ASP as an alternative.	.90	.80
We will explicitly pay attention to the possibilities that ASP provides for the management of our IT infrastructure.	.86	.74
Alpha = .91, composite reliability = .86, average variance extracted = .61		
New application technology		
ASP allows my company to use new applications.	.84	.80
ASP will stimulate new ideas concerning the applications in my firm.	.84	.84
ASP allows applications that thus far were not available for my firm.	.75	.68
ASP allows us to make big leaps forward in using the new application technologies.	.80	.65
ASP allows my firm to keep track of new applications.	.86	.73
ASP allows my firm to introduce new applications.	.85	.76
Alpha = .90, composite reliability = .88, average variance extracted = .56		
Network technology		
ASP makes it easier to safeguard our information systems.	.82	.76
ASP will make our servers more applicable.	.88	.72
ASP allows greater access to our applications.	.82	.66
Alpha = .79, composite reliability = .76, average variance extracted = .51		
Production efficiency		
ASP allows my firm to focus on core activities.	.80	.64
ASP lowers the costs of the IT infrastructure.	.77	.65
ASP provides more certainty concerning costs of application services.	.80	.70
Alpha = .80, composite reliability = .67, average variance extracted = .50		
Switching costs		
When the contract with an application service provider is terminated, we can easily transfer to another provider.	.85	.78
When the contract with an application service provider is terminated, we can easily manage the IT infrastructure ourselves.	.84	.78
Once my firm is using application services, it is difficult to get rid of them. ^a	.80	.83
Alpha = .78, composite reliability = .84, average variance extracted = .63		
Asset specificity		

(Continued)

Table 1 (Continued)

Constructs	Item Correlation With Total Score	Factor Loadings
My company has modified its applications to the specific needs of its employees.	.78	.79
My company has an IT infrastructure that is uniquely tailored to the firm.	.85	.85
My company needs a lot of time before employees are trained so that they can use the new applications.	.75	.67
Alpha = .71, composite reliability = .82, average variance extracted = .60		
Market uncertainty		
My company is capable of predicting the demands of our products and services.	.88	.83
My company is capable of predicting its financial performance for the next year.	.87	.83
Alpha = .69, composite reliability = .82, average variance extracted = .69		
Technological uncertainty		
It is difficult to predict the pace of developments in information technology.	.88	.86
It is difficult to keep up with the developments in information technology.	.87	.72
Alpha = .70, composite reliability = .77, average variance extracted = .63		
General outsourcing		
My company engages frequently in outsourcing activities.	.87	.85
My company easily outsources different activities.	.90	.88
Top management has a positive attitude towards the outsourcing of activities.	.86	.82
Alpha = .85, composite reliability = .89, average variance extracted = .72		
IT strategic importance		
My company has an IT infrastructure that is strategically important for the company.	.82	.78
Top management attaches a lot of value to the well-functioning of the IT infrastructure.	.81	.84
Our business processes are highly dependent on a well-functioning IT department.	.87	.89
Top management finds it important that the IT department is involved in our firm's strategic decision making.	.82	.81
Without a well-functioning IT department, we lose market share.	.76	.60
Alpha = .79, composite reliability = .89, average variance extracted = .62		

Note: $\chi^2 = 728$, $df = 466$, $p < .01$, $\chi^2/df = 1.56$, root mean square estimated residual = .05, comparative fit index = .93. ASP = application service provider.

a. Reverse-scored.

Dependent variable: Outsourcing decision. To measure the outsourcing decision in an early-stage market, we measure the propensity to outsource using the firm's intent to outsource application services. Some firms may consider outsourcing application services, but practical barriers may hinder the actual implementation of outsourcing. The outsourcing intent scale in our survey shows considerable convergent and divergent validity; however, this does not preclude the possibility that the information source (the respondent) explains variance between the dependent and independent variables, which may partly explain the study's results. Therefore, 2 years after the survey, we looked at whether the respondents actually signed a service-level agreement with the provider, which is archival evidence of the outsourcing decision. From the 178 respondents, 48 confirmed that they signed a service-level agreement, and 17 were not willing or able to cooperate, thereby resulting in our being able to use data from 161 respondents. The archival measure of outsourcing reduces the risks of common method bias; however, the reduction in scale points and sample size also decreases the statistical power of the moderator tests (Aguinis, 1995). Furthermore, in conceptual terms, our perceptual measurement relates to the pretransaction phase, whereas the service-level agreement refers to the transaction phase in the industrial buying process (Vyas & Woodside, 1984). Therefore, given the conceptual and empirical strengths and weaknesses of both measures, we employed both.

To examine whether common method bias may augment relationships in the perceptual data, we first performed Harman's one-factor test on the self-reported items of the latent constructs included in our study. The hypothesis of one general factor underlying the relationships was rejected ($p < .01$). In addition, we found multiple factors, and the first factor did not account for the majority of the variance. However, this test has several limitations (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003); therefore, we conducted additional tests. First, a model fit of the measurement model of more than .90 (comparative fit index = .93 in Table 1) suggests no problems with common method bias (Bagozzi, Yi, & Phillips, 1991). Second, the smallest observed correlation among the model variables can function as a proxy for common method bias (Lindell & Brandt, 2000). Table 2 shows a value of .02 to be the smallest correlation between the model variables, which shows no evidence of common method bias. Finally, we performed a partial correlation method (Podsakoff & Organ, 1986). The highest factor between an unrelated set of items and each predictor variable was added to the model. These factors did not produce a significant change in variance explained, again suggesting no substantial common method bias. In sum, we conclude that the evidence from a variety of methods supports the assumption that common method bias does not account for the study's results.

Control variables. We also include in our study a number of control variables. Firms with experience in outsourcing in other business functions are more likely to have the competencies to deal with the complexity of outsourcing; therefore, they might have a higher outsourcing propensity. Hence, we control for the firm's overall level of outsourcing. Furthermore, we include the strategic importance of the outsourced activity as a control variable, given that activities that are considered of strategic importance are less likely to be outsourced. Finally, we include as control variables firm size, the size of the IT department, and the industry sector.

Table 2
Descriptive Statistics

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Application technology	4.41	1.00											
2. Network technology	3.66	1.13	.56*										
3. Production efficiency	3.88	1.08	.63*	.56*									
4. Switching costs	5.03	1.08	-.03	.19*	.10								
5. Asset specificity	4.04	1.16	-.11	.03	-.11	-.05							
6. Market uncertainty	3.16	1.08	.04	.02	-.04	-.07	.09						
7. Technological uncertainty	4.21	1.18	.30*	.22*	.21*	.02	.09	.02					
8. Log IT department size	-0.38	2.96	.02	.05	.06	-.18*	.39*	.10	-.08				
9. General outsourcing	3.94	1.30	.17*	.14	.17*	-.12	.08	.05	.16*	-.03			
10. IT strategic importance	5.35	1.04	.03	.02	.07	-.38*	.20*	.29*	-.14	.32*	.07		
11. Log firm size	3.10	1.27	-.16*	-.05	-.05	-.28*	.22*	.05	-.12	.43*	.11	.25*	
12. Industry sector	0.42	0.49	-.05	-.05	-.00	-.20*	.12	.12	-.07	.07	.22*	.23*	.31*

**p* < .05.

Results

Preliminary Analyses and Descriptive Statistics

As previously referenced, Table 2 presents correlations and descriptive statistics of the variables. When examining the correlations, we can see that resource attributes show relatively high intercorrelations. Even though the variance inflation factor scores are low and correlations are all smaller than .70, the average variance extracted from the production efficiency variable is relatively low, and the three variables are conceptually related to resource access. To check for this concern, we first ran the models for one resource attribute at a time. All three resource attributes remained significant when tested individually in the model. This leads us to conclude that multicollinearity did not affect the results of our study.

All variables (as shown in Table 3) were placed into a multiple regression that resulted in an estimated model that is significant, with a p value below .001. The coefficient of determination (R^2) suggests that the unrestricted regression model can explain 59% of the variation around the average of the dependent variable. The Goldfeld–Quandt test was used to identify possible heteroscedasticity, and variance inflation factors and matrix decomposition were used to detect multicollinearity. The results ($F = 1.04$, variance inflation factors < 2 , condition numbers < 20) did not indicate any problem, and plots of the error term of the regression model suggest a normal distribution.

Test of Hypotheses

The model was examined in two ways. First, analyses were performed to test for the individual hypotheses. Second, the model was tested from a more general point of view, whereby production efficiency and access to technology of outsourcing are seen as conceptualizations of resource access and where asset specificity, switching costs, and market and technological uncertainty are seen as conceptualizations of transaction costs.

First, Table 3 suggests that the production efficiency advantage is positively related to the firm's intent to outsource application services through ASP ($p < .001$; consistent with Hypothesis 1a). Furthermore, the results suggest that the application and network technology advantages are also positively related to the intent to outsource application services through ASP (respectively $p < .001$ and $p < .01$). These results substantiate Hypothesis 1b, suggesting that access to technology through outsourcing is positively related to the firm's outsourcing decision. In confirming Hypotheses 1a and 1b, our results suggest that ASP indeed provides substantial access to distinct resources and capabilities that expand the scope of the value creation processes, where the need to have access to a broad technology base is at least as important as the need to access production efficiency through outsourcing application services.

Second, Table 3 suggests that transaction cost considerations play a significant role in outsourcing application services (consistent with Hypotheses 2a, 2b, and 2c). Hypothesis 2a

Table 3
Results of the Ordinary Least Squares Regression Analysis of Outsourcing Intent

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	3.56***	0.57	2.78***	0.48	-0.11
Control variables					
Log IT department size	.16*	.08	.25**	.14*	.14*
General outsourcing	.25***	.12*	.25***	.14**	.09 [†]
IT strategic importance	-.08	-.12*	.08	-.02	.04
Log firm size	-.16*	-.05	-.11	-.02	-.03
Industry sector	.04	.07	.09	.11 [†]	.12*
Resource attributes					
Production efficiency (H1a)		.32***		.26***	.26***
Application technology (H1b)		.24***		.25***	.31***
Network technology (H1b)		.23***		.22***	.20**
Transaction attributes					
Asset specificity (H2a)			-.24**	-.14**	-.16**
Switching costs (H2b)			-.22**	-.13**	-.18**
Market uncertainty (H2c)			.17**	.13**	.16**
Technological uncertainty (H2c)			.19**	.10*	.16**
Interactions (mean centred)					
Production Efficiency × Asset Specificity (H3)					-.15**
Production Efficiency × Switching Costs (H3)					-.10*
Production Efficiency × Market Uncertainty (H3)					.17**
Production Efficiency × Technological Uncertainty (H3)					.14**
R^2	.08**	.49***	.20***	.54***	.59***
ΔR^2 (Model 1)		.41***	.12***	.46***	.51***
ΔR^2 (Model 2)				.05**	.10**
ΔR^2 (Model 3)				.24***	.39***
ΔR^2 (Model 4)					.05**

Note: $n = 178$.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

is substantiated ($p < .01$), indicating that the costs of safeguarding against opportunistic behavior of the ASP may significantly reduce the firm's intent to outsource application services. Furthermore, Hypothesis 2b is substantiated ($p < .01$), suggesting that switching costs reduces the strategic flexibility of the firm and, thereby, the firm's intent to outsource application services. Lastly, Hypothesis 2c is substantiated ($p < .01$); that is, environmental uncertainty (market and technological) is positively related to the firm's intent to outsource application services. These results suggest that in the context of explicit cross-boundary coordination routines, internal organization costs, rather than the costs

of recontracting, determine the relationship between uncertainty and the choice of the governance mechanism.

Finally, we used hierarchical regression analysis to examine the hypothesized interaction effects. The statistic measuring the change in R^2 (ΔR^2) between the restricted and full models is substantial (5%) and highly significant at a 1% significance level for the set of interaction terms. The results support Hypothesis 3—namely, that the relation between the production efficiency advantage and the firm's outsourcing intent is moderated by transaction cost variables, where asset specificity ($p < .01$) and switching costs ($p < .05$) reduce the firm's capability to create value from ASP resources and where market uncertainty ($p < .01$) and technological uncertainty ($p < .01$) increase it. The positive effects of market and technological uncertainty indicate that the effect of misalignment is neutral between the impact of internal organization costs and external sources of transaction costs.

Although the sizes of the standardized coefficients of the main effects in the model indicate that resource attributes of ASP have a dominating impact on the firm's outsourcing intent, the coefficients of the interactions suggest that transaction attributes can moderate resource value creation in strategic outsourcing of application services. Overall, these results provide strong support for the alignment proposition—specifically, that the ability to create value from resource attributes interacts with transaction and governance particulars.

With respect to the control variables, IT department size, general outsourcing, and industry sector do have significant effects on the firm's intent to outsource application services (respectively, $p < .05$, $p < .10$, $p < .05$). However, neither IT strategic importance nor firm size has a significant effect on the firm's intent to outsource application services.

To test whether each construct of the model had significant additional explanatory value, a linear regression was performed in the following manner: Constructs were added consecutively in blocks to test whether there was a significant change in the R^2 . First, the control variables were added as one block in the model, which resulted in an R^2 of .08 ($p < .01$). In the next block, the conceptualizations of resource access were added ($R^2 = .49$, $p < .001$). The ΔR^2 equaled .41 and was highly significant ($p < .001$). This suggests that the construct of resource access has significant additional explanatory value with respect to the control variables. Subsequently, in the next two blocks, the transaction attributes and the interaction effects were added. Again, the changes in R^2 were highly significant both for transaction costs ($\Delta R^2 = .54$, $p < .001$; $\Delta R^2 = .05$, $p < .01$) and for the interaction effects ($R^2 = .59$, $p < .001$; $\Delta R^2 = .05$, $p < .01$). Overall, we may conclude that resource access, transaction costs, and the interaction effect between resource access and transaction costs demonstrate significant explanatory power.

Table 4 gives the results of a logistic regression analysis using service-level agreements as the dependent variable. Tables 3 and 4 can be compared only with regard to their significance levels and signs; no comparisons can be made of the coefficient levels. When comparing Tables 3 and 4, we can see that there are several differences. First, of the significant control variables in Table 3, only industry sector remains significant ($p < .01$) in Table 4; in addition, IT strategic importance becomes significant ($p < .10$). IT department size and general outsourcing have lost their significance in Table 4, whereas the results for firm size remain unchanged.

Table 4
Results of the Logistic Regression Analysis of Service Level Agreements

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-2.20*	-11.00***	-0.35	-12.16***	-14.10***
Control variables					
Log IT department size	.06	-.01	.15†	.05	.07
General outsourcing	.33**	.14	.18*	.22	.10
IT strategic importance	.14	.11	.20*	.43†	.44†
Log firm size	-.23†	-.01	-.09	.03	.05
Industry sector	.29	.83*	.11	.99*	1.12**
Resource attributes					
Production efficiency (H1a)		.84**		.67**	1.12**
Application technology (H1b)		.74**		.92**	1.07**
Network technology (H1b)		.50**		.51*	.33†
Transaction attributes					
Asset specificity (H2a)			-.16*	-.33*	-.19
Switching costs (H2b)			-.21**	-.50*	-.59*
Market uncertainty (H2c)			.13*	.32*	.46*
Technological uncertainty (H2c)			.15*	.69*	.79*
Interactions (mean centred)					
Production Efficiency × Asset Specificity (H3)					-.60**
Production Efficiency × Switching Costs (H3)					-.34†
Production Efficiency × Market Uncertainty (H3)					.00
Production Efficiency × Technological Uncertainty (H3)					.33†
Cox and Snell R^2	.06†	.31***	.13**	.34***	.39***
Δ Cox and Snell R^2 (Model 1)		.25***	.07**	.28***	.33***
Δ Cox and Snell R^2 (Model 2)				.03*	.08**
Δ Cox and Snell R^2 (Model 3)				.21***	.32***
Δ Cox and Snell R^2 (Model 4)					.05*

Note: $n = 161$.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

The results for the resource and transaction attributes are the same in Tables 3 and 4. It must be noted, though, that the significance levels are generally somewhat lower for the results in Table 4. This could be expected because the reduction in scale points of the dependent variable in Table 4 eliminates information regarding the moderating effect; therefore, the population moderating effect is underestimated (Aguinis, 1995). Again, the restricted model (without the interaction effects) is used to examine the difference between Tables 3 and 4 with regard to resource and transaction attributes. In summary, looking at Table 4 does not affect the conclusions made earlier on Hypotheses H1a, H1b, and H2a–H2c. Finally, when comparing the interaction results from the two tables (using the results from

the unrestricted model), one can see that the interaction effect between production efficiency and market uncertainty is no longer significant. An explanation of this result may be that internal organization systems are in a better position to deal with market changes, which are relatively low when compared with the technological changes in our sample (see the means in Table 2). The other interaction effects remain significant. In addition, in terms of the whole model, adding the constructs in blocks (as done for Table 3) resulted in significant changes in the R^2 .

Overall, the above leads us to conclude that the same conclusions can be made on the basis of the results of Table 4, as were made on the basis of those of Table 3. However, the results of Table 4 are constrained by the lower sample size, by scale coarseness, and by the existence of a time gap of about 2 years between measuring the constructs and collecting the data on service-level agreements.

Discussion and Conclusion

In this study, we set out to better understand how value creation and value claiming influence the firm's outsourcing decision. An integrative framework, developed from the RBV and from TCE, proved to be a valuable instrument for analyzing facilitatory and inhibitory factors in strategic outsourcing decisions. The results presented here show that resource access opportunities are a principal driver of strategic outsourcing decisions and may even require the use of governance structures that are less efficient from a transaction cost perspective. Moreover, we demonstrated that these variables interact, which supports the notion of context specificity of resource advantages (Brouthers et al., 2008; Oliver, 1997; Priem & Butler, 2001) and which shows that adequate alignment of resource and transaction attributes may enable effective deployment of resources and capabilities. The empirical examination of outsourcing application services demonstrated that managers need detailed knowledge of transaction and resource attributes (and how they interact) to make balanced outsourcing decisions.

The results of this study show that transaction attributes not only include the costs of value claiming resulting from holdup and ex post small-numbers bargaining but also set boundaries to resource value creation between transaction partners; furthermore, they show that this will particularly harm the deployment of external resources to upgrade internal resources or to create synergy with internal resources. These results suggest that value creation considerations are not independent from opportunism-based considerations and that misalignment between resource and transaction attributes may therefore have important long-term implications for firm strategies. We therefore conclude that in addition to the country-specific institutional context (Brouthers et al., 2008), value-claiming motivations are an important resource contingency factor, even within a single country-specific context.

The results of this study underlie the importance of researching contingency variables that may moderate the value of resources and capabilities. Further research could explore how other potential contingency factors, such as market power (Shervani, Frazier, & Challagalla,

2007), trust (Lui & Ngo, 2004), and industry institutions (Hoskisson, Johnson, Tihanyi, & White, 2005; Martinez & Dacin, 1999), may influence resource value creation.

Furthermore, by combining RBV and TCE variables, we have demonstrated that the resource-based reinterpretation cannot fully explain the relationship between asset specificity and vertical integration, as suggested by previous studies (e.g., Carter & Hodgson, 2006; Monteverde, 1995). The relationship between asset specificity and vertical integration decisions holds, even when controlling for the production efficiency advantages of outsourcing, which supports the validity of the TCE framework.

This study also informs RBV in that dynamic capabilities are an important explanation of resource value in outsourcing decisions. Misalignment of resource and transaction attributes reduces the potential for value creation through knowledge exchange and learning in outsourcing relationships. This is particularly important for firms that need to adapt, enhance, or reconfigure their internal resource bases, which provides support for the conception of governance decisions as building blocks of dynamic capabilities (Teece, 2007).

Finally, we have informed TCE on an important contextual limitation of the theory. Adaptive coordination efficiency of hierarchical governance may not be superior to market governance if cross-boundary adaptive coordination is characterized by explicit routines—that is, explicit description of the parties' roles, ownership, responsibilities, and contingency planning (Argyres & Mayer, 2007). In this context, internal organization costs, which are positively related to environmental uncertainty (Williamson, 1985), dominate the governance decision. Insights into this contextual limitation of TCE help to explain contradictory empirical findings reported in the literature (e.g., Carter & Hodgson, 2006; David & Han, 2004). Future research should develop a direct measurement of the explicit/implicit nature of adaptive coordination routines, to further explore their role in the TCE framework. In addition, future research could explore the negative effects that bureaucratic internal organization systems have on internal resource value creation, as a factor in the comparative institutional framework (Hennart, 1994).

The results presented here have to be seen in the light of the limitations of this study. First, our sample is relatively small and refers only to outsourcing in the publishing and printing industry in the Netherlands. Future research should validate the results in a variety of industries and other interorganizational resource exchange settings. Second, subsequent work could investigate the interdependence between resource value creation and value claiming in a longitudinal model, including an analysis of a sequence of outsourcing decisions and their impact on firm performance over time. In particular, the moderating role of adaptive coordination mechanisms and of mechanisms that moderate the costs of misalignment between resource and transaction attributes may be a fruitful area of future research that could extend the alignment model proposed in this study. Third, the results reflect only the views of IT managers, which may be biased, given that outsourcing application services might reduce the prestige of IT managers within their companies. Fourth, the ASP industry is relatively new; hence, most IT managers do not have extensive experience with ASP, which may have influenced the results of our study. More experienced buyers, for example, are more aware of switching costs and are more confident that these switching costs are relevant (Verhoef, Franses, & Hoekstra, 2002). Thus, future research could investigate the impact of the firm's

learning process during outsourcing relationships. Finally, our study assumes that the value creation potential of outsourcing is known or can be assessed probabilistically; however, under entrepreneurial conditions where value creation potential is uncertain, different value-claiming mechanisms may apply (Alvarez & Barney, 2005).

Our study has demonstrated that misalignment of resource and transaction attributes has an impact beyond the direct impact of holdup and ex post small-numbers bargaining and that it can affect the potential for value creation in outsourcing relationships. As suggested by Leiblein (2003), Oxley (1999), and Williamson (1991) and as demonstrated by our study, bringing together RBV and TCE has the potential to reveal significant linkages between the approaches. Linkages with other theories may reveal additional resource contingency variables that further develop our understanding of the context-specific nature of resource value creation. In a networked global economy, in which the search for valuable resources will become more intense, the companies that will profit most will be those that are able to realign resource–value maximization and the risks of the exchange partner’s value claiming across different institutional contexts. We hope our findings encourage future research to investigate other potential resource contingency factors which helps managers to optimize resource value creation across different contextual settings.

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