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UNDERSTANDING SATISFACTION WITH SERVICE PROVIDERS FROM THE RESOURCE-BASED VIEW OF A FIRM

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Abstract

Drawing on the resource-based view (RBV), the aim of this research is to better understand how satisfaction with application service providers (ASPs) is affected by intangible assets in interorganizational relationships (e.g. antecedents of non-contractibility), which in turn are influenced by IT-enabled resources such as information systems (IS) integration and ambidexterity of software development. Empirical findings support the proposed model. We discuss the implications for practitioners and research.

Keywords: the Resource-based view, non-contractibility, satisfaction, ASPs.
1 INTRODUCTION

The reduced cost and enhanced security of Internet based transactions contribute to the emergence of on-demand software delivery service models in different forms such as application service providers (ASPs) (Benlian & Hess 2011). The goal of ASPs is to provide client firms with information technology (IT) services over the Internet, including access to resources and ability to transform them into a customized service, (Susarla et al. 2009, 2010; Valente & Mitra 2007). Compared to traditional IT outsourcing, ASP provider bears more responsibility than those in traditional IT outsourcing, including better use of resources and provision of high quality of IT services. Besides, as outsourcing in ASP involves knowledge interdependencies between the client and its provider—context specific knowledge essential to undertake the outsourced task is embedded in the client’s routines and information channels, and has difficulties in tracing the provider’s failures of service execution and in structuring contracts. Thus, following prior literature, this study uses clients’ satisfaction as a measure of ASP success (Susarla et al. 2003).

While satisfaction can be improved or affected from different ways, such as the provider’s service quality and capability (Montoya et al. 2010; Susarla et al. 2010), expectation about the service (Susarla et al. 2003), and the capability of dealing with transaction hazard (Susarla et al. 2009), relatively few empirical studies considered how to increase a client’s satisfaction from using resources—or providers’ capability of offering resources in ASP context to enhance satisfaction, which is a gap in deepening understanding about how a client gains benefits from choosing the most capable provider and how a provider enables the IT resources to offer satisfied service. To fill this gap, this study uses the resource-based view (RBV) (Bharadwaj 2000; Wade & Hulland 2004) as a theoretical underpinning to conceptualize the IT resources with the aim of improving satisfaction.

This study identifies two types of resources—the capabilities of improving interorganizational relationships and IS capabilities. The former is conceptualized as non-contractible features of relationships based on incomplete contract theory (ICT) (Bakos & Brynjolfsson 1993), and we operationalize IS capabilities as IS integration and IS development ambidexterity e.g. flexibility of implementing IS projects. ICT is used as a theoretical lens to identify the key variables salient to improving interfirm relationships, in terms of facilitating interaction between partners and improving the performance of the outsourced task (Mithas et al. 2008). We use IS application capabilities to explain how a provider’s capabilities to implement and manage IS projects affect the interfirm relationships based on the relational view of the firm (RVF). By conceptually embedding ICT and the RVF into the framework of the resource-based view, this study provides theoretical insights into how the provider’s capabilities of managing IT resources and inter-firm relationships affect its client’s satisfaction. Our specific research questions are as follow:
RA1: Whether the provider’s capability to manage inter-firm relationships with its client, in terms of increasing task performance and facilitating interaction, affects its satisfaction?

RA2: Whether the provider’s IS capabilities influence its capability of manage inter-firm relationships?

2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This study uses two streams of literature to develop the conceptual model, delineating the relationships between the variables salient to satisfaction including non-contractibility and IS application capabilities.

2.1 Incomplete contract theory (ICT)

ICT is used to expand understanding about governance choices for IT-enabled exchanges emphasized on the notion of non-contractibility (Bakos & Brynjolfsson 1993). The aim of ICT is to combine both transaction costs economics (TCE)(Williamson 1985) and relational approaches based on sociological arguments and is focused on the importance of relational influences (i.e. coordination and closeness) to explain the drivers of interorganizational relationships. However, conventional TCE and relational approaches usually focus on asset specificity and view uncertainty as a given (outside the control of a client) element of a relationship with its service provider, without recognizing its influence of uncertainty through its governance and sourcing choices. The aim of ICT is to address the above limitations by providing a more comprehensive consideration, in terms of non-contractibility, of how the interorganizational relationship can be improved and why the client is attracted by such non-contractibility.

Using ICT and non-contractibility in the ASP context is suitable, because predetermination of contractual contingencies is difficult if not impossible, due to knowledge interdependence between the provider and its client, the inseparable role between the client’s consumption of service and its production (Susarla et al. 2009, 2010), service uncertainty, the provider having more control over future development of IS product and bearing more responsibility for service execution. While IS literature has used non-contractibility to explain the reasons for selecting the relationships between suppliers in the context of Internet-enabled reverse auction, none of extant research examined its impact in an context of on-demand outsourcing (i.e. ASP). To address this issue, we conceptualized non-contractibility as task-based and interaction-based non-contractibility (Kayworth et al. 2001; Mithas et al. 2008). The former ensures the provider is willing to offer high quality service, in terms of three characteristics-- quality, relationship-specific and technological investments, and information exchange, while the interaction dimension focuses on longevity of the relationships, characterizing as responsiveness, trust, and flexibility. We expect that when the provider is willing to devote its
investment to interorganizational relationship with its client, in terms of non-contractibility, its client will be more satisfied.

2.2 Strategic perspective of ASP

Prior research has used a strategic perspective to explain why and how a firm implements outsourcing strategies to gain competitive advantage based on the resource-based view of the firm (RBV) (Bharadwaj 2000; Wade & Hulland 2004) and the relational view of the firm (RV) (Im & Rai 2008; Saraf et al. 2007). The RBV posits that resources, in terms of capability or assets, internal to a firm play a key role in increasing its competitive advantage and performance (Bharadwaj 2000). The RV is an extension of the RBV and suggests that a firm’s critical resources may be embedded in interfirm processes (Dyer & Singh 1998). As such, we theorize resources critical to interorganizational relationship as the service provider’s IS application capabilities, defined as the extent to which the firm is able to manage various IS processes to offer high quality services to its client, such as interface integration, IS development and maintenance. Specifically, we use IS integration and IS ambidexterity (Gibson & Birkinshaw 2004; Rai et al. 2006; Saraf et al. 2007; Tiwana 2010). IS integration refers to the provider’s ability to help its client IS applications work as a whole with its partners’ IS applications, this study focuses on interfirm interface and in-depth description of the interaction between modules (Susarla et al. 2010). IS ambidexterity, also known as system development ambidexterity, is defined as the capability of simultaneously aligning the outsourced task with the client’s needs and adapting to these needs’ related IS development activities (Gibson & Birkinshaw 2004; Tiwana 2010). Thus, as suggested by the RV and empirical evidence of the link between IS capabilities and better use of interfirm resources (such as knowledge sharing and cooperation), we expect that such capabilities positively affect the provider’s ability to achieve non-contractibility.

3 HYPOTHESIS DEVELOPMENT

This study provides a model for deepening our understanding of how a client firm’s satisfaction can be improved. The development of the hypotheses is based on two streams of logic. First, for hypothesis 1 and 2, we posit that the client firm’s satisfaction with an ASP depends on how the ASP improves their relationships—in terms of providing non-contractible benefits (hypothesis 1 and 2). Second, we expect that these benefits in turn rely on whether the ASP has the capability of achieving IS integration and system development ambidexterity—H3a-b, H4a-b.

ASP business model emphasizes the importance of client firm’s satisfaction, which plays a crucial role in outsourcing success (Susarla et al. 2003). In an ASP context, satisfaction with the service offered by the vendor (or the ASP) improves the process of organizational assimilation (Pieters et al. 1995) and plays an important role in retaining customers. Thus, examining satisfaction becomes important to firms that attempt to use a new business model such as ASPs (Susarla et al. 2003). Because the unique
feature of the ASP business model is to transform software into a service, the paradigm of client firms’ satisfaction with an ASP offers a fresh insight into the process that affects the client firm’s evaluation of the ASP service in the post-implementation stage.

Quality refers to the extent to which the service provided by an ASP is able to comply with the client firm’s requirements. The nature of the service offered by ASPs is to provide the client firm with IS applications over the Internet. Only when the IS users have used these applications, they are able to evaluate the performance of the ASP or quality of service delivery (Montoya et al. 2010).

The capability of offering efficient and quality services depends on whether ASPs are willing to invest considerable time and effort in technological developments and innovation (Susarla et al. 2003). Clients prefer to build strong relationships with the ASP that tends to adopt innovative and advanced technology. Higher level of ASPs’ technological investments not only reflects their orientation to use of new technology but also is likely to enhance performance in service and process innovation (Helper 1991).

In order to improve the quality of service provided by Internet-enabled services, an ASP should be aware of the context-specific knowledge about the client firm’s work process (Montoya et al. 2010). However, the client-specific knowledge (or information) essential to undertaking a task is embedded in the client firm’s work processes and information channel, which are difficult for the ASP to obtain and for the client firm to provide (Susarla et al. 2010). Thus, information exchange refers to a non-contractible element of an ASP-client relationship and plays a key role in affecting a client firm’s satisfaction. Based on the above arguments, we expect that task-based non-contractibility, conceptualized as quality, technological investments, and information exchange, is positively related to satisfaction.

**H1: the greater the task-based non-contractibility in exchange relationships between an ASP and a client firm, the more the client has satisfaction with the ASP.**

Based on the extant work, interaction-based non-contractibility is characterized as responsiveness, trust, and flexibility. Responsiveness requires an ASP to understand the hidden meanings of client-specific knowledge (Suaarla et al. 2010). Thus, it is difficult to specify all the contingencies for responsiveness in a contract, giving it a non-contractible element. Trust has been recognized as an essential non-contractible attribute of a relationship (Bakos & Brynjolfsson 1993). In an ASP context, trust refers to the extent to which a client firm has confidence in relying on the ASP (Mithas et al. 2008; Susarla et al. 2009). The more an ASP earns the trust of their client firm, the more likely the client is willing to share client-specific knowledge and cooperate in the development of the outsourced project (Monczka et al. 1998; Susarla et al. 2010). Responsiveness focuses on the operational perspective of a relationship, while flexibility relates more on the strategic issues (Monczka et al. 1998). Flexibility refers to the extent to which an ASP is willing to adjust its behavior or the terms of a
contract based on the environmental changes or the users’ needs (Heide & John 1992; Susarla et al. 2009). The more flexibility a supplier has, the more likely a buyer prefers to deepen the relationships with the supplier in a business-to-business outsourcing context (Mithas et al. 2008). In an ASP context, since the service provided by an ASP is unable to precisely clarify in advance, its flexibility becomes important and plays a key role in enhancing a client firm’s satisfaction.

**H2: the greater the interaction-based non-contractibility in exchange relationships between an ASP and a client firm, the more the client has satisfaction with the ASP.**

IS integration refers to one of guarantee of quality. IS integration is interpreted broadly—while some studies suggest that it is important to measure the capability of integrating diverse IS components of a firm by enterprisewide infrastructure (Broadbent et al. 1999), this study uses interfirn interface to represent the aim of IS integration (Saraf et al. 2007). Because standardized interfaces (or modular architecture) play a key role in deepening the relationships between an ASP and its client, interfaces are viewed as effective measures of an IS integration (Susarla et al. 2010).

The higher the level of IS integration provided by an ASP, the more likely that the ASP is able to help the client achieve syntactic integration and semantic integration (Saraf et al. 2007). Syntactic integration is fostered by implementing a single database in the ASP’s infrastructure or by integration between the databases. An ASP’s capability of enabling semantic integration indicates that inter-organizational IS applications are able to be integrated, which help a client firm process orders, share customer data, or make a decision. Based on the above reasoning, we propose H3a.

**H3a: The more the IS integration provided by an ASP, the more likely that the task-based non-contractibility in exchange relationships between an ASP and a client firm can be achieved.**

An ASP’s IS integration capabilities is viewed as an effective measure of its performance and implies that the ASP is capable of providing modular architecture and standardized interface, which in turn helps the client firm communicate with the ASP effectively (Susarla et al. 2010). IS integration represents an important achievement of an ASP, which in turn implies the functional capability and technical service guarantees of the ASP (Saraf et al. 2007; Susarla et al. 2003). We thus have H3b.

**H3b: The more the IS integration provided by an ASP, the more likely that the interaction-based non-contractibility in exchange relationships between an ASP and a client firm can be achieved.**

An ASP’s ambidexterity refers to its capability of simultaneously performing alignment with the client’s requirements and adaptation of changes that result from the needs for IS development activities (Gibson & Birkinshaw 2004; Tiwana 2010). Alignment refers to the extent to which the ASP is able to accomplish the objective of the outsourced project such as the client firm’s requirements and quality expectations. Adaptation refers to the ASP’s capability of achieving coherence in its project activities so that the misalignments with evolving project objectives can be corrected (Tiwana 2010).
The possible reasons for adaptation include—changes caused by the needs and environments of the client firm or refining the client’s initial specifications.

When an ASP has the capability of simultaneously achieving alignment and adaptation, the ASP is viewed by the client as delivering a high quality outsourced project. This is so because alignment helps the client firm reduce the negative influence caused by the unanticipated changes in circumstances surrounding an exchange. Alignment also enables the ASP to comply with a client’s requirements even when its objective has been modified and the client demands an increase in quality expectations have been increased (Susarla et al. 2009; Tiwana 2010). The more adaptation an ASP has, the more likely it will achieve the outsourced project objectives—the ASP strives to meet the client’s expectations in delivering high-quality services (Tiwana 2010). In other words, the ASP is willing to follow the client firm’s rules, suggestion, and directions. Thus, an ASP’s ambidexterity indicates that the ASP devotes its effort and resources to ensuring high product performance in terms of task dimension of non-contractibility (Mithas et al. 2008), leading to H4a. The above ASP is also willing to strengthen its relationship with the client firm because the ASP with ambidexterity tends to show its willingness to make necessary adjustments and accommodate the client’s requests (Mithas et al. 2008), resulting in H4b.

**H4a:** The more the systems development ambidexterity provided by an ASP, the more likely that the task-based non-contractibility in exchange relationships between an ASP and a client firm can be achieved.

**H4b:** The more the systems development ambidexterity provided by an ASP, the more likely that the interaction-based non-contractibility in exchange relationships between an ASP and a client firm can be achieved.

4 **METHOD**

4.1 **Sample and data collection**

Based on the interviews with managers who have considerable experience in managing ASP projects, with researchers who place their focus on ASPs, and the existing measures that were identified as suitable for this study, the initial structured questionnaire was developed. With the help of a bilingual research associate, the above English questionnaire that was first compiled and modified to suit the context of ASPs has been translated into Chinese. To ensure face and content validity, the draft questionnaire was pretested by two IS managers of client firms and two project managers of ASPs. The above procedures lead to minor modifications of the wording of a few survey items. A five point Likert scale was used for questions of the survey.

A total of 750 surveys were mailed, with follow-up letters four weeks later. We received a total of 243 valid responses of which 226 were complete in all aspects, leading to a 30.1% response rate. This is
consistent with the response rates in similar research based on survey method (Mani et al. 2010). Table 1 shows the salient features of the respondents such as industry types and firm size.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>184</td>
<td>69.1</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>82</td>
<td>30.9</td>
</tr>
<tr>
<td>Industry groups</td>
<td>Construction/Building</td>
<td>13</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>48</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>Electronics/semiconductor</td>
<td>45</td>
<td>16.9</td>
</tr>
<tr>
<td></td>
<td>Information technology</td>
<td>37</td>
<td>13.9</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td>12</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Trade industry</td>
<td>9</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>Government department</td>
<td>15</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>Metals/steel</td>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td>Finance/insurance</td>
<td>34</td>
<td>12.8</td>
</tr>
<tr>
<td></td>
<td>Petrochemistry/plastics</td>
<td>8</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>7</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>28</td>
<td>10.5</td>
</tr>
<tr>
<td>Annual sales (NT$)</td>
<td>Less than 1 billion</td>
<td>74</td>
<td>27.8</td>
</tr>
<tr>
<td></td>
<td>1-3 billion</td>
<td>44</td>
<td>16.5</td>
</tr>
<tr>
<td></td>
<td>4-5 billion</td>
<td>62</td>
<td>23.2</td>
</tr>
<tr>
<td></td>
<td>More than $5 billion</td>
<td>86</td>
<td>32.3</td>
</tr>
<tr>
<td>Number of employees</td>
<td>Less than 100</td>
<td>102</td>
<td>38.4</td>
</tr>
<tr>
<td></td>
<td>100-300</td>
<td>30</td>
<td>11.3</td>
</tr>
<tr>
<td></td>
<td>301-500</td>
<td>23</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>501-1000</td>
<td>25</td>
<td>9.4</td>
</tr>
<tr>
<td></td>
<td>More than 1000</td>
<td>86</td>
<td>32.3</td>
</tr>
</tbody>
</table>

*Table 1. Demographic data (N=266)*

4.2 Measures

Existing scales were adapted to the context of ASPs. The survey of this study was developed for a single-respondent, using a cross-sectional data collection approach. The unit of analysis is a firm that has experience in outsourcing its IT applications to an ASP. The proposed model includes five constructs, which were measured with a multi-item scale. Four items were used to measure satisfaction. In addition, both task-based and interaction-based non-contractibility were viewed as a
second order construct. Task-based non-contractibility contains three dimensions—quality, technological investments, and information exchange. Interaction-based non-contractibility includes responsiveness, trust, and flexibility. The measures of these constructs were developed by modifying the scale proposed by Mithas et al. (2008) to suit the ASP context. For control variables, this study measured contract duration, service level agreement, and infrastructure capability (Susarla et al. 2009, 2010).

5 DATA ANALYSIS AND RESULTS

This study used structured equation modeling (SEM) with partial least squares (PLS-Graph Version 3.01) analysis to test the measurement and structural model of this study. The reason for using PLS is that it neither is contingent on data with multivariate normal distribution nor needs to have large sample sizes as is the case with other SEM techniques such as LISREL (Chin 1998).

5.1 Measurement model

Two-stage analytical procedures were used (Hair et al. 1998). Confirmatory factor analysis was used to examine the measurement model; then, the structural model was assessed. Two superordinate second-order constructs using factor scores of the first-order constructs were created, because the proposed model includes two second-order constructs—task-based and interaction-based non-contractibility (Chin et al. 2003). To validate the measurement model, item reliability and three types of validity were evaluated—content validity, convergent validity, and discriminant validity. The aim of content validity is to ensure the consistency between the measurement items and the extant literature. This was performed by interviewing senior practitioners with ASP experience and pilot-testing the survey. The convergent validity was based on the measures of Cronbach’s alpha, composite reliability and average variance extracted (AVE) (Hair et al. 1998). According to Table 2, the values of composite reliability ranged from 0.822 to 0.924, and those of AVE ranged from 0.553 to 0.794. Based on the values of Cronbach’s alpha, composite reliability, and AVE, the measurement model has high internal consistency. The discriminant validity of the instrument is validated by examining the square root of the AVE (Fornell & Larcker 1981). Table 3 reports the mean, standard deviation, and range for each construct. Based on this table, the conditions of discriminant validity are satisfied, thus the discriminant validity is confirmed.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Composite Reliability</th>
<th>AVE</th>
<th>Cronbach’s Alpha</th>
</tr>
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<tbody>
<tr>
<td>Satisfaction (ST)</td>
<td>4</td>
<td>0.924</td>
<td>0.753</td>
<td>0.890</td>
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<tr>
<td>Quality (QU)</td>
<td>3</td>
<td>0.823</td>
<td>0.609</td>
<td>0.677</td>
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<tr>
<td>Technological investments (TI)</td>
<td>3</td>
<td>0.894</td>
<td>0.738</td>
<td>0.821</td>
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</table>
Table 2. Composite reliability, AVE, and Cronbach’s alpha

<table>
<thead>
<tr>
<th>Cons.</th>
<th>MN</th>
<th>S.D.</th>
<th>ST</th>
<th>QU</th>
<th>TI</th>
<th>IE</th>
<th>RP</th>
<th>TR</th>
<th>ISI</th>
<th>AL</th>
<th>AD</th>
<th>CD</th>
<th>SLA</th>
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<tr>
<td>ST</td>
<td>3.72</td>
<td>0.73</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>QU</td>
<td>3.97</td>
<td>0.78</td>
<td>0.61</td>
<td>0.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TI</td>
<td>3.81</td>
<td>0.80</td>
<td>0.54</td>
<td>0.59</td>
<td>0.85</td>
<td></td>
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<td></td>
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<tr>
<td>IE</td>
<td>3.68</td>
<td>0.85</td>
<td>0.46</td>
<td>0.38</td>
<td>0.41</td>
<td>0.74</td>
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<tr>
<td>RP</td>
<td>3.85</td>
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<td>0.49</td>
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<td>0.37</td>
<td>0.44</td>
<td>0.43</td>
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<td>0.96</td>
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<td>0.30</td>
<td>0.39</td>
<td>0.37</td>
<td>0.39</td>
<td>0.27</td>
<td>0.29</td>
<td>0.81</td>
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<td>0.40</td>
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<td>0.32</td>
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<td>0.51</td>
<td>0.89</td>
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<td>CD</td>
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<td>1.44</td>
<td>0.08</td>
<td>0.12</td>
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<td>0.21</td>
<td>0.35</td>
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</table>

The shaded numbers in the diagonal row are square roots of the AVE.

Table 3. Correlation between construct

5.2 Structural model

With a validated measurement model, PLS was used to assess the proposed hypotheses. The evaluation of the structural model involves the estimation of the path coefficients and the $R^2$ value. The results of these tests are demonstrated in Figure 1 and summarized in Table 4. The results of the proposed model are discussed in the following sequence—non-contractible constructs (H1 and 2) and an ASP’s IS application capabilities in terms of IS integration and ambidexterity of software development (H3a-b and H4a-b).
H1: Task-based Non-contractibility $\rightarrow$ Satisfaction $\beta = 0.470^{***}(7.089)$ Supported

H2: Interact-based Non-contractibility $\rightarrow$ Satisfaction $\beta = 0.207^{***}(2.945)$ Supported

H3a: IS Integration $\rightarrow$ Task-based Non-contractibility $\beta = 0.446^{***}(8.653)$ Supported

H3b: IS Integration $\rightarrow$ Interact-based Non-contractibility $\beta = 0.392^{***}(7.810)$ Supported

H4a: Ambidexterity $\rightarrow$ Task-based Non-contractibility $\beta = 0.062(0.843)$ Not Supported

H4b: Ambidexterity $\rightarrow$ Interact-based Non-contractibility $\beta = 0.086^{*}(1.349)$ Supported

*p<0.1; **p<0.05; ***p<0.01

Table 4. Results of hypothesis testing

To deepen our understanding of the intermediate effect of ambidexterity and IS integration, two relationships were investigated. First, we examined the direct relationships, including a direct model of IS integration and ambidexterity predicting satisfaction. The $\beta$s of IS integration and ambidexterity were 0.408 (p<.01) and 0.217 (p<.01) respectively and their $R^2$s were 24.3% and 21.5% respectively. Then, we proceeded to explore whether there is a mediation effect by adding the intervening variables (task-based and interaction-based non-contractibility). The results show that interaction-based non-contractibility partially mediates the relationship between ambidexterity and satisfaction ($\beta = 0.107$, p<.05, $R^2 = 23.4\%$) because the indirect paths were significant and the direct path was lessened. Similarly, the relationship between task-based non-contractibility and satisfaction was partially mediated by IS integration ($\beta = 0.131$, p<.05, $R^2 = 27.2\%$).
6 DISCUSSION

The aim of this research is to study the determinants of a client firm’s satisfaction with the service provided by an ASP. The confirmation of H1 and H2 provides an adequate explanation for why non-contractible benefits delivered by the ASP affect a client-firm’s satisfaction. To the best of our knowledge, this is the first empirical study that applies the incomplete contracts arguments and the RBV regarding IT-enabled relationships to the context of ASPs, indicating that a client firm gains satisfaction from an ASP when it shows sustained non-contractible commitments to the relationships with the client firm. From the perspective of the RBV, our findings confirm that managing the relationships with an ASP, in terms of task-based and interaction-based non-contractibility, is viewed as a valuable resources. Further, our findings imply that non-contractibility addresses the need for quality, information exchange, technological investments, trust, responsiveness, and flexibility, which in turn enhances a client firm’s satisfaction. These results reinforce the argument that in addition to ASPs’ service-level agreements that ensure network and application reliability, and scalability of the software (Susarla et al. 2003), non-contractible aspects of client-ASP relationships serve to highlight the reasons for a client’s satisfaction.

Both H3a and H3b are confirmed, indicating that the more an ASP is able to ensure IS integration, the more likely that the client will believe in the ASP’s capability of providing the needed services and in its willingness to deliver non-contractible benefits. This can be explained based on the relationships between IS applications capabilities and performance as suggested by prior work (Saraf et al. 2007; Susarla et al. 2003). They suggested that IS integration is able to foster information exchange and increase integration of processes spanning firm boundaries, this in turn not only improves the firms performance but also their satisfaction. While prior studies (Susarla et al. 2003) suggest that ASPs’ functional capability such as competence and efficiency exerts a significant influence on a client firm’s satisfaction, this study advances this argument by showing that IS application capabilities (such as enabling IS integration) have great importance not only to ASP initiatives, but also to deepening the relationships between the ASP and its client. According to the RBV, our findings offer an interpretation that resources are related. Satisfaction is directly associated with the assets (in terms of non-contractibility) provided by the ASP, which in turn relies on its IT capabilities in terms of IS integration. Clarifying the relationship between different types of resources (assets and capabilities) helps us understand how to use these resources so as to improve clients’ satisfaction. In an increasingly competitive business and changing IT environment, exchange relationships between an ASP and its client are likely to face the challenge of uncertainty, referring to unanticipated changes caused by unforeseen circumstances surrounding an exchange (Susarla et al. 2009). Besides, firms without a wide range of IS applications experience and expertise are vulnerable to security lapses and network failures (Susarla et al. 2003). The above problems are unable to be completely rectified even if the reliability of the offered IT service has been ensured by the ASP. Thus, how to improve the
relationships between an ASP and a client becomes important and an ASP’s capability of IS integration refers to an approach that is aimed to deepen the above relationships.

H4b is confirmed as expected. Ambidexterity is positively associated with task-based non-contractibility even though the relationship is not statistically significant—H4a is not supported. Prior studies have stressed the importance of ambidexterity in increasing relationship performance, which refers to the extent to which the partners think their relationship worthwhile and satisfying because the partners are capable of providing high quality service or willing to share knowledge (Gibson & Birkinshaw 2004; Im & Rai 2008). Our results extend these studies by showing that the more an ASP has the capability of performing ambidexterity of IS development and applications, the client is more likely to believe that the ASP is capable of providing non-contractible benefits. The possible reason is that in order to reduce the negative influence caused by uncertainty or the unforeseeable future such as fluctuations in customer demand and changes in products, business processes, or features of IT, how the ASP aligns its IS development and applications with the client’s business needs and adapts to growing demands becomes important. Ambidexterity in turn earns the client firm’s trust and the client is more likely to believe that the ASP is willing to offer non-contractible benefits.

6.1 Implications for research

First, identifying the importance of non-contractibility, which serves as a resource or an asset aimed at managing external relationships, broadens our knowledge about how client satisfaction is affected by non-IS resources. This in turn suggests that non-contractibility provided by an ASP can be viewed as an important non-IS resources in addition to IS resources. These findings contribute to the research on ASPs and the resource-based view of the firm (RBV). Second, an ASP’s IS capabilities are directly and indirectly through non-contractibility associated with satisfaction.

Understanding the above relationships between resources and competitive advantage (or satisfaction) helps researchers advance knowledge about how competitive advantage in terms of satisfaction is influenced by different types of resources, and how relational assets (or resources) are affected by IS resources. As our research is built on well-established theory, i.e. RBV, generalization of our findings contributes to the field of ASP model.

6.2 Limitations and future research

This study has three limitations. First, in addition to the variables that we investigated in this study, several factors may affect a client’s satisfaction in ASP context. Other factors such as the service mechanisms provided by the ASP, or knowledge sharing between a client and an ASP may influence satisfaction. Second, this study highlighted the importance of non-contractibility and an ASP’s IS capabilities without exploring the influence of task environment such as complexity and
interdependence of the outsourcing task. Future study may examine their impact. Finally, since cross-sectional surveys usually suffer the lack of causality as is this study, future study may focus on in-depth process-oriented research design based on the RBV. This may help better understand how different types of resources (in terms of non-contractible elements, IS integration, and system development ambidexterity) affect satisfaction.

References


