Managing Service Innovation and Interorganizational Relationships for Firm Performance: To Commit or Diversify?

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Managing Service Innovation and Interorganizational Relationships for Firm Performance

To Commit or Diversify?

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An increasing body of research suggests interorganizational relationships as being critical to the financial performance of firms. Similarly, innovation has been considered a key driver of the growth and success of firms. However, little work has examined how the extent firms' interorganizational relationship commitment and diversity influence their innovation focus and performance. In this article, the authors show that diverse interorganizational relationships reduce the positive impact of innovation focus on firm performance. In contrast, interorganizational relationship commitment increases service innovation focus and strengthens the innovation focus–firm performance relationship. The findings are based on multisource and longitudinal performance data and highlight the positive impact of relationship commitment on the effects of service innovation focus on firm performance. Implications for management and research are discussed.

Keywords: *service innovation; interorganizational relationships; relationship commitment; relationship diversity; firm performance*

The growing importance of interorganizational relationships as a source of competitive advantage (Palmatier, Dant, and Grewal 2007; Rindfleisch and Moorman 2001) and the need to develop a deeper understanding of how innovation efforts affect firm performance (Hull 2004; Rust, Lemon, and Zeithaml 2004) urge research to shed additional light on the linkages between interorganizational relationships, innovation, and firm performance. Interorganizational relationships are likely to take on added significance for service firms, since their ability to customize and integrate goods and services for the development of new customer solutions is influenced by relational processes between exchange partners (Bolton, Smith, and Wagner 2003; Tuli, Kohli, and Bharadwaj 2007; Vargo and Lusch 2004; Zeithaml, Parasuraman, and Berry 1985).

While previous research acknowledges the importance of innovation and interorganizational relationships (Cannon and Homburg 2001; Moorman, Zaltman, and Deshpandé 1992; Palmatier 2008; Palmatier et al. 2007; Rindfleisch and Moorman 2001), empirical evidence on the extent and nature of the effects of interorganizational relationships on innovation and firm performance remains scarce. Specifically, although past findings highlight relationship commitment, the willingness "to go the extra mile" to keep exchange partners (De Wulf, Odekerken-Schröder, and Iacobucci 2001), and diversity of interorganizational relationships (e.g., connectedness with exchange partners differing in size, age, capabilities,

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and industry) (Rodan and Galunic 2004; Wuyts et al. 2004) as being especially important to firms, we are still left with the critical question as to whether service firms should diversify, or commit to, their interorganizational relationships in order to manage innovation and performance more effectively.

Existing research indicates that interorganizational relationship commitment, on one hand, can lead to greater trust and enable firms to manage transactions in ways that maximize the synergies between exchange partners (Cannon and Homburg 2001; Rindfleisch and Moorman 2001; Van Den Bulte and Wuyts 2007; Wathne and Heide 2000). On the other hand, it has been argued that the conditions that facilitate trust and reciprocity may reduce firms' competitive vigilance, leading to the potential for collective blindness and inertia (Fang et al. 2008; Portes and Sensenbrenner 1993; Uzzi 1997). This article addresses the call for service research in business-to-business marketing (Parasuraman 1998) and extends current knowledge in important ways. First, we provide empirical evidence to address the ambiguity in the current body of literature regarding the effects of interorganizational relationship commitment on service firms' focus on innovation and their performance. Second, we investigate whether interorganizational relationship diversity enhances firms' service innovation focus by connecting diverse exchange partners. Third, we examine the influence of interorganizational relationship commitment and diversity on the effects of innovation focus on firm performance.

Answers to the question of whether firms should invest in strengthening relationship commitment or build relationships with a diverse set of exchange partners are critical to research and marketing managers alike. While the links to diverse exchange partners have been hailed to facilitate access to nonredundant information, they have also been suggested to impede the transfer of complex knowledge (Hansen, Nohria, and Tierney 1999). The management of relationships with a diverse range of exchange partners therefore is likely to require a different set of skills than relationship commitment (Rindfleisch and Moorman 2001; Uzzi 1997; Van Den Bulte and Wuyts 2007). Given firms' limited resources, potential tradeoffs exist between "going the extra mile" to keep exchange partners and connectedness to a diverse set of exchange partners. Specifically, time and efforts invested in managing connections with a diverse range of partners may reduce firm resources dedicated to keeping extant relationships. Importantly, whether to invest in relationship commitment or more diverse interorganizational relationships is a decision that can be influenced by the managers of service firms. Given the relevance of interorganizational relationships, we integrate them in our analysis of firms' focus on innovation and performance.

We employ multisource and longitudinal performance data and control for lagged firm performance to examine the role of relationship commitment and diversity in influencing innovation focus and performance. In addition to complementing current knowledge about the role of interorganizational relationships in driving service firms' focus on innovation and performance, findings provide critical implications for managers wishing to manage interorganizational relationships for more effective service innovation efforts and greater performance.

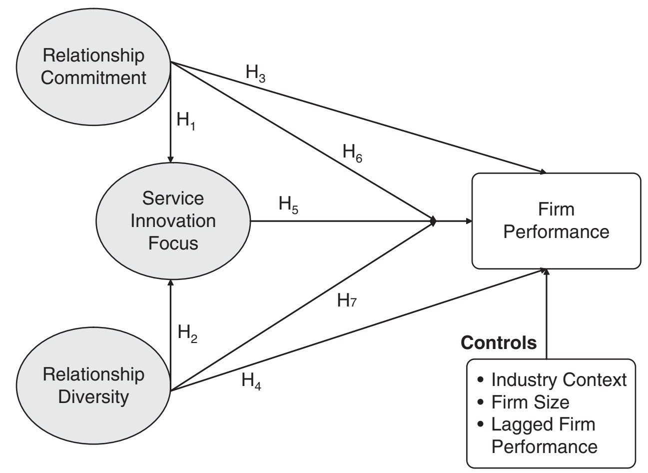
Theoretical Background and Hypotheses

The characteristics of interorganizational relationships in terms of commitment and diversity are likely to be of particular relevance to firms offering services to businesses because of the intangible, and often complex, nature of services provided (Zeithaml 1981). To the extent service firms can take advantage of reduced uncertainty and more efficient collaboration through long-term, committed relationships (Cannon and Homburg 2001; Fang et al. 2008; Palmatier et al. 2007), firms consequently might be able to dedicate more resources to the development of new services and service-related processes. Moreover, commitment between exchange partners may be argued to help a firm gain deeper knowledge of exchange partners' needs and thus facilitate access to valuable resources for the successful development and marketing of new service offerings and processes (Bell and Eisingerich 2007; Lovelock and Gummesson 2004; Shah et al. 2006; Tuli et al. 2007). On the other hand, it can be argued that the development of new service products necessitates firms to draw from a diverse set of knowledge to generate new ideas and offer customer solutions rather than standardized service products. Fang et al. (2008), for instance, suggest that an inward-looking orientation weakens firms' responsiveness to environmental change. To the extent knowledge heterogeneity among exchange partners may foster firms' ability to acquire and employ different sets of competitive capabilities (Rodan and Galunic 2004), interorganizational relationship diversity may influence a firm's ability to focus on innovation and, consequently, achieve greater performance.

Managers have been argued to set the directions for firms and influence the way information is used for strategy formulation (Broadbent and Kitzis 2004; N. Kumar 2004). Through their communications and actions, managers guide and focus the general activities of firms, including the management of interorganizational relationships. In doing so, managers need to make decisions regarding a firm's usage of resources across alternative operations and focus on activities that are likely to sustain current and fuel future business growth. Previous research suggests that the focus of managers on certain issues will lead to greater awareness and importance of these types of issues in firms (Hambrick, Nadler, and Tushman 1998). Accordingly, when managers pay greater attention to service innovation, their actions and communications are likely to guide employees' focus and motivation to exploit the potential opportunities of service innovation–related processes. The more focused managers are on service innovation, the more time and effort individual employees are likely to invest in thinking about, and working on, processes related to service innovation.

Figure 1 illustrates the conceptual model guiding this study. First, we hypothesize interorganizational relationship commitment and diversity to influence a firm's focus on service innovation. Second, we investigate the direct influence of commitment and diversity of interorganizational relationships on firm performance. Third, we examine the impact of innovation focus on performance. Finally, we examine the effect of interorganizational relationship commitment and diversity on the influence of firms' service innovation focus on performance.

Figure 1
Conceptual Framework



Interorganizational Relationships and Service Innovation Focus

We broadly define the network under study as the set of formalized cooperative relationships between competitors and collaborators along which information and knowledge can be transmitted. Consistent with Gnyawali and Madhavan (2001), we do not specify the nature of these relationships (e.g., alliances, joint ventures, interlocking ties), but in order to provide a broad picture, we focus on every type of network in which information can be transmitted across members. Relationship commitment, defined as firms' willingness "to walk the extra mile" to keep exchange partners (De Wulf et al. 2001), is likely to affect the extent a firm focuses service innovation for a number of reasons. For instance, prior research suggests that commitment between exchange partners can facilitate trust, which encourages firms to collaborate more closely (Fang et al. 2008; Moorman et al. 1992; Morgan and Hunt 1994). The development of new service processes or products may often necessitate an integrated combination of goods and services as well as the exchange of knowledge between exchange partners. Relationship commitment, through frequent and trusting interactions, can enable firms to better assess their exchange partners' resources, capabilities, and needs (Anderson and Weitz 1992), thus making complementarities more visible.

Not only may relationship commitment provide firms with access to resources that would otherwise be beyond the scope of a single firm (Portes and Sensenbrenner 1993), but relationship commitment may also assist with the transfer of tacit knowledge and other intangible resources, many of which are embedded in processes, that can help firms identify ways of developing new service products and processes. Furthermore, relationship commitment is likely to expose exchange partners' mutual dependencies and the cost of opportunistic behavior and thus further encourage exchange partners to share information and work together more effectively (Hibbard, Kumar, and Stern 2001). As firms begin to exchange more information with each other, it may get easier for individual firms to spot opportunities for the development and marketing of new service products or processes. As the manager of a midsized consulting firm put it (this and subsequent quotes are taken from interviews with managers that are part of this study that is described later in the article):

> Chronic connectivity makes for an easier dialogue. We are picking up new ideas from our partners all the time. In a sense, they provide us with additional market intelligence.

Accordingly, the commitment of firms to their exchange partners is likely to facilitate information sharing and cooperation by gradually eliminating suspicions and conflict of interests (Morgan and Hunt 1994). The more information a service firm is able to exchange with business partners, the more likely it is to learn and focus on the development of new service solutions. Because firms have to spend less time and effort resolving exchange partner–related problems, they can afford to invest more time and resources on focusing on service innovation–related processes. Accordingly, we hypothesize the following:

Hypothesis 1: The stronger a firm's relationship commitment, the greater its focus on service innovation.

Relationship diversity, defined as the extent to which a firm is connected to a range of exchange partners, differing in size, age, capabilities, or industry, is likely to influence firms' focus on service innovation for the following reasons. First, service firms with a network of diverse exchange partners may be suggested to have greater access to nonredundant information (Rodan and Galunic 2004) and thus may be more likely to identify new service innovation opportunities. In contrast, networks of homogenous exchange partners may be less efficient in providing access to, and identifying ways of exploiting, new technologies and ways of doing business (Baum, Calabrese, and Silverman 2000). On the other hand, it can be argued that it will be more difficult for service firms to focus on innovative service processes and products when dealing with a diverse set of exchange partners. For example, the relational processes involved in the development and provision of customer solutions, including customization and postdeployment support (Tuli et al. 2007), may be more difficult to manage and may even distract service firms to the extent to which they have to stretch their time and effort to provide support across a wide range of business areas. As the manager of a contract research provider put it:

> It takes a lot of time to build customer-specific expertise. Sometimes we have to tell interested customers that we simply can't do it. They operate in a completely different industry and we do not have the manpower to do everything.

While relationship diversity can expose service firms to the challenges and opportunities customers are facing across different market environments and thus grant access to heterogeneous knowledge, the management of relationships with diverse exchange partners may stretch firms' resources and limit their ability to invest time and effort in focusing on new service processes or products. For instance, the manager of a firm in the information and communication technology sector mentioned the following:

> We used to work with a great range of clients. And soon we realized how difficult it was to meet all their needs. It stretched all our resources. Our competitors were able to market key, new offerings and we did not. We simply tried too hard to serve everyone and in the end it did not benefit us at all.

On the basis of these arguments, we hypothesize interorganizational relationship diversity to have a negative effect on the extent firms focus on service innovation:

Hypothesis 2: The greater a firm's relationship diversity, the weaker its focus on service innovation.

Interorganizational Relationships, Service Innovation Focus, and Firm Performance

Previous research provides strong support for a positive relationship between relationship commitment and the performance of firms (De Wulf et al. 2001; Palmatier et al. 2007). For instance, commitment has been argued to enhance performance by leading to greater trust between exchange partners (Cannon and Homburg 2001; Hibbard et al. 2001; Moorman et al. 1992; Morgan and Hunt 1994; Rindfleisch and Moorman 2001). As a result of enhanced trust, relationship commitment is likely to facilitate cooperation and reduce conflicts between exchange partners (Hibbard et al. 2001; Jap and Ganesan 2000). Past research, therefore, encouraged firms to manage their brand image strategically to allow for stronger and more meaningful relationships with partners (Park, Jaworski, and MacInnis 1986). Moreover, to the extent commitment can reduce opportunistic behaviors of exchange partners, firms may be able to manage uncertainty and opportunism more effectively when committed to their exchange partners (Wathne and Heide 2000).

In contrast, interorganizational relationships that link diverse sets of business partners may enable firms to access a wider range of information and resources (McFadyen and Cennalla 2004; Rodan and Galunic 2004). As a result of greater access to diverse information, firms may be able to acquire more competitive capabilities than firms connected to a homogeneous set of exchange partners (McEvily and Zaheer 1999). Based on these arguments, interorganizational relationships that connect heterogeneous exchange partners are likely to positively affect firm performance. Rowley, Behrens, and Krackhardt (2000), for example, show that firms with diverse interfirm relationships can trade on access to a wide range of information and resources and as a consequence of this enjoy greater performance. Baum et al. (2000) found similar results for biotechnology start-ups, where interfirm networks with access to heterogeneous knowledge positively influenced firm performance. Based on these arguments, we hypothesize the following:

Hypothesis 3: The stronger a firm's relationship commitment, the greater its performance.

Hypothesis 4: The greater a firm's relationship diversity, the greater its performance.

Innovation has been linked to performance in a number of studies across industries (Damanpour and Evan 1984; Eisingerich and Kretschmer 2008; Fang, Palmatier, and Steenkamp 2008; Han, Kim, and Srivastava 1998; Hull 2004; Pauwels et al. 2004; Sorescu and Spanjol 2008). Innovation can help firms manage and drive environmental change while assisting them in coping with environmental uncertainty (Damanpour and Evan 1984). Indeed, innovation may be the only effective way of avoiding commoditization (Lyons, Chatman, and Joyce 2007). Accordingly, we argue that firms with greater focus on service innovation are likely to successfully commercialize new service offerings and, consequently, achieve greater financial performance than firms that do not focus on the development and commercialization of new services or service-related processes. Therefore, we hypothesize the following:

Hypothesis 5: The stronger a firm's focus on service innovation, the greater its performance.

Relationship Commitment and Diversity as Moderators

Relationship commitment and diversity are likely to have a different impact on the influence of service innovation focus on firm performance. Relationship commitment can grant firms access to knowledge and resources that would otherwise be beyond the scope of a single actor (Portes and Sensenbrenner 1993). Accordingly, commitment can help firms in their efforts to innovate and strengthen the impact of service innovation focus on performance. As the manager of a professional service firm explained:

> Much of our efforts to turn ideas into marketable products and service solutions would be wasted without commitment to our partners. We rely on them and they rely on us.

Similarly, to the extent commitment can improve coordination and reduce uncertainty between exchange partners (Palmatier et al. 2007; Rindfleisch and Moorman 2001), it is likely to enhance firms' chances of turning innovative efforts into financial successes. Specifically, relationship commitment has been shown to increase confidence in the good intent of exchange partners and their overall reliability (Morgan and Hunt 1994; Uzzi 1997; Van Den Bulte and Wuyts 2007). Reduced risk that exchange partners will take advantage of each other, in turn, will enhance firms' willingness to explore and take risks that are associated with bringing new service products or processes to market. Because of reduced perceived risks when dealing with exchange partners, relationship commitment increases firms' willingness to exchange valuable ideas and knowledge, hence improving firms' ability to detect and evaluate the capabilities and resources of their exchange partners more effectively (McFadyen and Cennalla 2004). Relationship commitment, therefore, is likely to enhance the capacity of firms to trade on the knowledge and resources of others when aiming to turn ideas into new services or service-related processes. On the basis of these arguments, we posit the positive impact of service innovation focus on firm performance to be greater when the commitment of interorganizational relationships is high.

Relationship diversity, on the other hand, may distract a firm's focus and, as a result of this, negatively influence the effect of attention to service innovation on profitability. This line of reasoning suggests that interorganizational relationship diversity can provide firms with diverse knowledge but at the same time can prevent firms from focusing on the development and commercialization of new services offerings. As Cohen and Levinthal (1990) argued, diverse knowledge is difficult to integrate and firms will need to invest time and effort to make sense of new ideas generated from diverse areas of specialization. The chief executive officer of an information technology support company explained it this way:

> We talk to customers and different suppliers all the time. This can be a good thing because we are learning from them. But it can also be distracting at times when we hear so many different things and sometimes we get lost.

Efforts required to integrate diverse knowledge bind firms' resources that otherwise might have been employed for the deeper understanding or exploitation of a specific market or technology. When dealing with a diverse set of exchange partners, firms may find it more difficult to deepen relationships with individual partners and thus may be faced with less efficient communication and knowledge-sharing processes. As past research shows, relationship strength or quality is an important driver of value for firms and their customers (De Wulf et al. 2001; Morgan and Hunt 1994; Palmatier 2008; Van Den Bulte and Wuyts 2007). Because it takes time to assimilate new and diverse knowledge, relationship diversity is likely to reduce firms' speed to market when commercializing new ideas regarding service products or processes. Therefore, relationship diversity is likely to have a negative impact on the effects of service innovation focus on performance. Formally, we hypothesize the following:

Hypothesis 6: Relationship commitment strengthens the impact of service innovation focus on performance.

Hypothesis 7: Relationship diversity weakens the impact of service innovation focus on performance.

Method

Sample and Data Collection

Because of limited research on the relationships between interorganizational relationships, service innovation focus, and performance, we initially followed a discovery-oriented approach and over a period of 4 months conducted 38 depth interviews, lasting between 35 and 190 minutes, with managers and executives of professional service firms across different industry contexts (Bendapudi and Leone 2002). Depth interviews helped us understand how managers conceptualize service innovation across different industries. The majority of interviewed managers (92%) viewed service innovation as both the development of new service offerings as well as the processes or methods employed to develop and market new services to customers. A common theme throughout the interviews was that interorganizational relationships play an increasingly important role in service innovation–related processes. Based on the findings from our depth interviews, we formulated a survey to formally test the hypothesized relationships with a random sample of 335 professional service providers. We

Table 1
Business-to-Business Service Contexts

Automotive (n = 33)	Information Technology (n = 36)	Biotechnology (n = 45)
Consulting	Consulting	Clinical trial management
Product development	Contract research	Consulting
Technical support	Information technology outsourcing	Contract research
	Product development	Technical support
	Technical support	
	Training	

double-checked individual service firms' focus by examining their list of customers and testimonials on company Web sites. Table 1 lists the professional service contexts in which these firms operated. First, we contacted individual firms to confirm the name of their manager. We then sent a short letter introducing our study and called individual managers to arrange face-to-face interviews. In the end, 114 managers agreed to participate in our study, for a response rate of 34%.

Measures

Table 2 provides a summary of measures/sources employed in this study and lists all scales, organized by construct. All scales (unless mentioned otherwise) used a 7-point, Likert-type scale with anchors of *strongly disagree* (1) and *strongly agree* (7).

Relationship commitment. We adapted a three-item scale from De Wulf et al. (2001) and defined *relationship commitment* as firms' willingness "to go the extra mile" to keep exchange partners. We adapted the wording of the measures to suit the context of the study.

Relationship diversity. On the basis of prior research, suggesting the importance of interaction between diverse actors (Portes and Sensenbrenner 1993) and potential dangers from inertia and lock-in effects (Fang et al. 2008; Portes and Sensenbrenner 1993; Uzzi 1997), we developed a three-item scale to measure the extent firms are connected with diverse sets of actors, differing in size, age, capabilities, and industry. To enhance face validity, we formed an initial pool of items intended to measure relationship diversity and discussed it with seven service firm managers and three academic researchers. We formally pretested our questionnaire with all constructs on a sample of 17 firms. Pretest responses were not

Table 2
Summary of Constructs and Measures

Constructs	Measures	Factor Loadings	Data Source
Relationship commitment	We are willing "to go the extra mile" to keep our exchange partners.	.91	Survey responses
	We feel loyal toward our exchange partners.	.96	
	Even if our exchange partners would be more difficult to reach, we would still keep doing business with them.	.94	
Relationship diversity	We are connected to a range of exchange partners, differing in size, age, capabilities, and industry.	.92	Survey responses
	We are connected to a diverse set of exchange partners.	.94	
	We are connected to a homogeneous group of exchange partners. (reverse coded)	.96	
Service innovation focus	Frequency of interviewees mentioning service innovation during the interviews (standardized by interview length)		Interview transcripts
Firm performance	Net income 2006		Company reports

included in our final sample, because we made minor revisions to the earlier version of the questionnaire.

Service innovation focus. Prior research on innovation has to a great extent relied on self-assessed levels of innovativeness, including letters to shareholders (D'Aveni and MacMillan 1990). However, respondents may present their organization in a more favorable way (i.e., deem their organization to be more innovative than it actually is) due to social-desirability bias. As discussed in previous research, social-desirability bias can lead to misleading results (Fisher 1993; King and Bruner 2000). While we used a set of questions for the interviews, we worded questions carefully to avoid directing interviewees' responses. Throughout interviews, we followed up on questions, clarified particular issues, and tapped into a wide range of experiences and perspectives. All but two interviews were recorded.

We measured a firm's service innovation focus by counting the number of times interviewees mentioned the word *innovation* in reference to service processes or service products and standardized the total count by interview length. Transcribed interviews and interview notes were coded by two independent raters. While face-to-face interviewing is very time consuming, the process allowed us to examine managers' focus on service innovation without having to rely on managers' self-assessment of their firms' service innovation focus. The coding of the service innovation focus measure was straightforward, and the agreement between independent raters was high (94%).

Firm performance. We use net income to measure firm performance. We collected net income data for 2006 from company reports, including financial statements and, in some cases, annual reports to shareholders.

Control Variables

Industry context. We controlled for industry context by including an industry dummy variable. It may be argued that service firms in a particular industry need to pay more attention to innovation than in other industries. ANOVA results indicate that relationship commitment, $F(2, 111) = .27$, $p > .10$, relationship diversity, $F(2, 111) = .17$, $p > .10$, and the extent to which firms focus on service innovation, $F(2, 111) = .55$, $p > .10$, do not significantly differ across industry contexts.

Firm size. Firm performance may be influenced by the size of firms. Accordingly, we controlled for firm size by taking into account the number of employees of individual firms in our sample.

Lagged firm performance. To account for preexisting conditions that may influence performance, we employed the lagged value of net income as a control variable. Lagged firm performance controls for preexisting conditions that might be driving the results and thus provides for a more rigorous check of our results.[1]

The desirable features of our data collection approach are noteworthy. First, we ensure independent variables are measured in a time period prior to the dependent variable. Unlike cross-sectional research efforts, the method employed for this study allows for a stronger test of causality. Moreover, unlike prior research based on self-evaluation measures, our method based on in-depth analyses of

Table 3
Means, Standard Deviations, Correlations, and Reliabilities

Variable	1	2	3	4	5	6	7
1. Net income	1.00						
2. Relationship commitment	0.46	1.00					
	(.00)	—					
3. Relationship diversity	–0.19	0.35	1.00				
	(.02)	(.00)	—				
4. Service innovation focus	0.68	0.45	0.05	1.00			
	(.00)	(.00)	(.29)	—			
5. Industry context	–0.02	0.01	0.03	0.04	1.00		
	(.43)	(.45)	(.40)	(.34)	—		
6. Firm size	–0.01	0.01	0.05	–0.09	–0.22	1.00	
	(.47)	(.46)	(.32)	(.17)	(.01)	—	
7. Lagged net income	0.42	0.17	–0.19	0.29	0.17	–0.04	1.00
	(.00)	(.03)	(.02)	(.00)	(.04)	(.35)	—
M	10,705,000	5.13	4.15	0.13	—	310.24	9,194,263
SD	11,065,375	1.21	1.49	0.08	—	323.23	9,608,384
Composite reliability		.95	.94				
Average variance extracted		.88	.86				

Note: Significance levels for correlations are in parentheses.

personal interviews affords greater confidence in results by minimizing response bias.

Measure Assessment

Table 3 lists construct means, standard deviations, correlations, and reliabilities. We used a partial least squares (PLS) technique because of the predictive nature of our study and because it provides unbiased estimates with small sample sizes (Jöreskog and Wold 1982). PLS estimated the measurement and structural model at the same time. Construct items were factored to assess whether they correctly measured their intended constructs. All item loadings were highly significant ($p < .01$) and greater than .90 with low cross-loadings (<.40). We therefore could keep our initial set of items (Fornell and Larcker 1981). As can be seen from Table 3, the estimates of the average variance extracted for both relationship commitment and relationship diversity were higher than .80 and thus exceeded the recommended level by Bagozzi and Yi (1988). Cronbach's alpha values for relationship commitment and diversity relationship scales were high (.93 and .92, respectively). We followed Fornell and Larcker's (1981) recommended test to assess discriminant validity. On the basis of this test, we found that the correlation between any pair of constructs was not larger than the respective square root of the average variance extracted for each of the constructs, in support of discriminant validity (Table 4). Furthermore, correlations between the interaction terms and the independent variables that comprise these terms are low and thus are not matter for concern.

Table 4
Discriminant Validity

	1	2	3	4	5
1. Relationship diversity	.93				
2. Relationship commitment	.34	.94			
3. Service innovation focus	.05	.45	1.00		
4. Firm performance	–.20	.46	0.68	1.00	
5. Lagged firm performance	–.19	.17	0.29	0.42	1.00

Note: Correlation between latent variables (off diagonal) and square root of average variance extracted (diagonal).

Results

PLS allowed us to specify both endogenous constructs (service innovation focus and firm performance) in a system of equations that are jointly estimated. We tested our hypotheses with four different models.[2] Model 1 (see Table 5) tests the direct effects of relationship commitment and diversity on performance. Hypothesis 3 predicted that relationship commitment will have a positive effect on firm performance. In support of Hypothesis 3, relationship commitment had a significant influence on performance (.54, $p < .001$). According to Hypothesis 4,

Table 5
PLS Results

Variable	Model 1 Direct Effects	Model 2 Nonmediation	Model 3 Partial Mediation	Model 4 Mediation Moderation
Industry → performance	–.04	–.05	–.05	–.03
	(.57)	(.73)	(.75)	(.48)
Firm size → performance	.09	.08	.08	.08
	(1.20)	(1.35)	(1.36)	(1.57)
Lagged performance → performance	.27	.17	.17	.15
	(2.84)*	(2.33)*	(2.24)*	(1.92)*
Relationship commitment → performance	.54	.32	.31	.34
	(8.70)***	(4.91)**	(4.67)**	(5.74)**
Relationship diversity → performance	–.33	–.30	–.30	.24
	(4.06)**	(4.42)**	(5.06)***	–(4.02)**
Relationship commitment → service innovation focus			.49	.49
			(6.81)***	(6.73)***
Relationship diversity → service innovation focus			–.12	–.12
			(1.28)	(1.29)
Mediation				
Service innovation focus → performance		.50	.50	.40
		(7.01)***	(6.66)***	(6.13)***
Interaction Effects				
Relationship Commitment × Service Innovation Focus → Performance				.26
				(3.87)**
Relationship Diversity × Service Innovation Focus → Performance				–.17
				(1.98)*
R^2				
Service innovation focus			.21	.21
Firm performance	.43	.61	.62	.67
ΔR^2‖I‖		.18	.19	.24
f Values		.46***	.50***	.73***

Note: PLS = partial least squares. *t* values are in parentheses.
*$p < .05$. **$p < .01$. ***$p < .001$.

relationship diversity will positively affect firm performance. Contrary to expectations, we find a negative impact of relationship diversity on performance (–.33, $p < .01$).

Model 2 adds the direct effect of service innovation focus on performance. In support of Hypothesis 5, we found a significant and positive impact of service innovation focus on performance (.50, $p < .001$). We calculated the effect size of adding a direct path between service focus and performance on the R^2 as $f = (R^2_{\text{FULL}} - R^2_{\text{MAIN}}) / (1 - R^2_{\text{FULL}})$ (Ordanini and Rubera 2008). The increase in R^2 attributable to adding this path was statistically different from zero ($f = .46$, $p < .001$).

In Model 3, we tested the partial mediation role of innovation focus. Hypothesis 1 predicted that relationship commitment will positively affect a firm's focus on service innovation. We found support for a positive and significant impact of relationship commitment on service innovation focus (.49, $p < .001$). Hypothesis 2 predicted that relationship diversity will have a negative influence on a firm's service innovation focus. As can be seen in Table 5, relationship diversity has a negative impact on the service innovation focus of firms, but the relationship is not significant at the .05 level ($\beta = -.12$). Hypothesis 2 therefore is not supported. The addition of paths linking relationship commitment and diversity to innovation focus significantly increased the R^2 ($f = .50$, $p < .001$).

Finally, in Model 4, we examined the moderating effects of relationship commitment and relationship diversity on the impact of innovation focus on performance. We standardized all measures and created two interactive terms as latent constructs with items that are the product terms of each pair of items. As can be seen from Table 5, relationship commitment strengthens the positive impact of firms' innovation focus on performance (.26, $p < .01$). In addition, we found that relationship diversity significantly weakens

Figure 2
Effect of Service Innovation Focus × Relationship Commitment Interaction

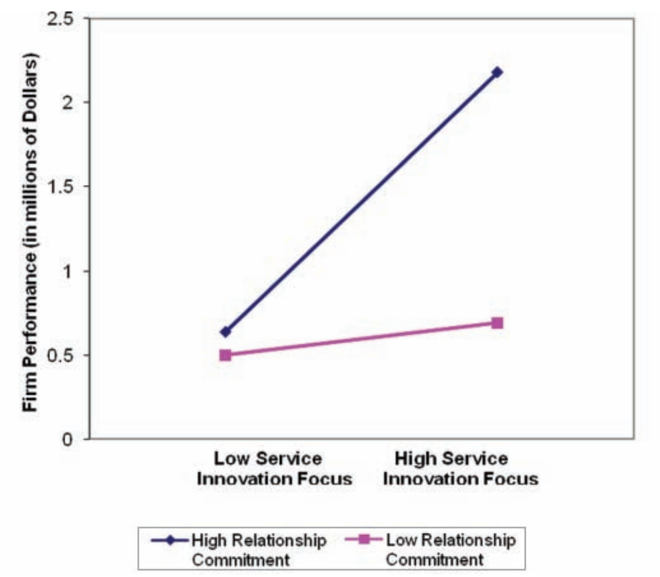
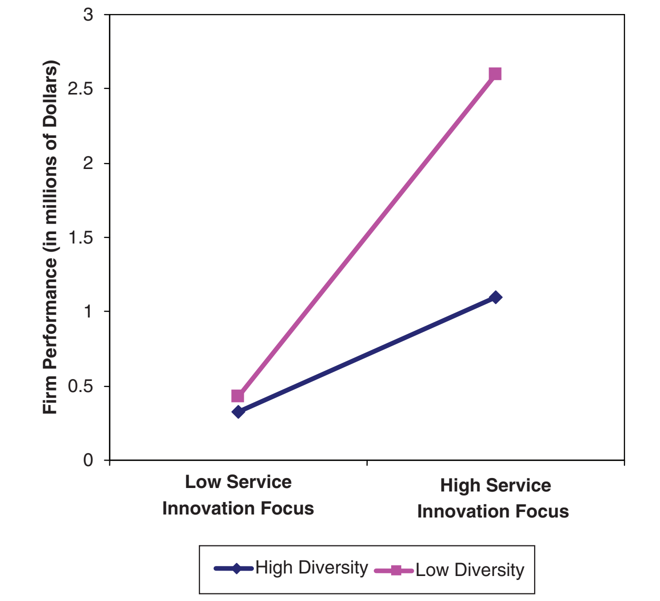


Figure 3
Effect of Service Innovation Focus × Relationship Diversity Interaction



the positive influence of innovation focus on performance (–.17, $p < .05$). Figures 2 and 3 illustrate the moderating effects of relationship commitment and diversity on the impact of service innovation focus on performance. The inclusion of interaction effects significantly improved the predictive power of the model ($f = .73$, $p < .001$).

Control variables. Lagged performance has a significant effect on performance in all four models (Table 5). Firm size and industry context, on the other hand, we do not find to influence performance.

Robustness Checks and Additional Analyses

We sought to address the question of whether innovation focus reflects actual service innovation by the firms in our sample. To present additional evidence for the appropriateness of our method and measure of service innovation focus, we compared the innovation focus of 36 service firms (32% of our sample) with their introduction of new services and service-related processes. Managers of these firms provided us with lists of new services and service-related processes introduced during the year of our study. We then analyzed the interviews with managers and computed a measure of service innovation focus (standardized by the length of individual interviews). The findings of this analysis show that the extent of service innovation focus, measured on the basis of the interview analyses, is significantly correlated with the number of new services/processes introduced ($p < .01$). While we acknowledge the limitations inherent in any interview-based approach, we assert that service innovation focus reliably reflects how focused service firms are on the introduction of new service products/processes.

Discussion

Managerial Implications and Future Research

The key objective of this study is to examine the role of firms' focus on service innovation in driving performance in the context of interorganizational relationships. The notion that interorganizational relationships matter already has gained wide and strong recognition among managers and marketing scholars. However, the extent to which relationship commitment and relationship diversity affect innovation focus and firm performance has remained less than clear. In this article, we argue and show that models of firm performance and innovation need to integrate interorganizational relationship variables to examine the context of innovation efforts by firms. Current results illustrate that the extent to which firms focus on service innovation will be influenced by the commitment of their interorganizational relationships. In addition to this, current results underscore the critical role of a firm's focus on service innovation in driving performance.

The findings have significant implications for service firm managers. Specifically, service firms must make the development of new service processes or products a priority in order to trade upon the commitment of their interorganizational relationships and drive performance. In the context of professional services, we show that relationship diversity negatively affects the performance of firms and thus needs to be managed carefully. One possible explanation for this finding is that firms may be in danger of losing focus when dealing with sets of diverse actors, as the assimilation and integration of diverse and new knowledge is not straightforward and difficult to manage (Cohen and Levinthal 1990). Dealing with sets of diverse exchange partners may simply leave firms with less time to focus on the development and commercialization of new service offerings. Diverse relationships therefore ought to be managed carefully in order for firms to avoid being trapped in a situation where they are less successful at the introduction and marketing of new service offerings.

In addition, current results show a positive moderation effect of relationship commitment on the innovation focus–performance relationship. The finding that a firm's focus on service innovation will lead to greater performance when it is committed to interorganizational relationships is in line with previous research that underscores the importance of intimate and stronger relationships between exchange partners (De Wulf et al. 2001; Eisingerich and Bell 2008; Jaworski and Kohli 2006; P. Kumar 1999; Parasuraman 2006; Rust et al. 2004; Shah et al. 2006; Thomson, MacInnis, and Park 2005). Managers can hope to achieve greater levels of firm performance by committing to both (a) exchange partners and (b) a strong focus on innovation. The current findings urge managers to build and strengthen a firm culture that embraces and rewards service innovation. Only if firms develop an internal culture that welcomes, expects, and rewards innovative processes will they be able to fully trade upon the knowledge and resources to be gained from relationships with other organizations, which in turn may further facilitate service differentiation efforts.

Our results need to be viewed in light of the following limitations. While interviews allowed us to establish a measure of innovation focus that does not rely on self-evaluations, our results are based on a relatively small sample size. We encourage future research to test the generalizability of our model with a larger sample. Moreover, we studied professional service firms to examine the effects of interorganizational relationships and innovation focus on performance across three different industry contexts. Relationship commitment may be less important in contexts other than professional services. To afford greater confidence in the generalizability of our findings, we invite future research to replicate our study in different service contexts.

Notes

1. We thank an anonymous reviewer for this point.

2. In order to reduce concerns related to heteroskedasticity, we scaled our measure of net income by total firm sales and redid the PLS analysis. The results are entirely consistent with the results that we report in the article, with the only exception that the control variable "lagged profits" is not significant when net income is scaled by total sales. We thank one anonymous reviewer for pointing out this issue.

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