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Organizational Innovation Capability: Creating and Appropriating Value in Channel Relationships

This paper examines the interplay between organizational innovation and competitive superiority in the context of channel management by adopting a capabilities view. The relevance for channel marketing and management scholars is that we developed an environment-strategy-value contingency model to address the focal phenomenon. Our empirical results clearly support the key argument that managerial and technological innovations play an essential role in understanding how competitive superiority is achieved in constantly evolving marketing channels. As such, our contingency factors involved have a significant intermediate role in each of the research contexts examined indicating that the innovation capability has a channel specific profile.

Introduction

Since the seminal contribution provided by Chandler (1962), the mutual relationships between a firm's strategy, structure and competitive conduct have commanded substantial attention. However, research in this field has overlooked an essential feature in the preceding interplay, i.e., innovation (Sanchez 1995). Strategy is concerned with creating and appropriating value and sustained competitive advantage, which, in turn, leads to competitive superiority (Day and Wensley 1988). Two processes are fundamental to achieve this outcome. The first process emphasizes especially capabilities in technological innovations, the other interacts with capabilities in managerial innovations (Han et al. 1998). The former involves the creation of

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value (customer value) by new or modified product or service offerings, while the latter focuses on appropriating value (firm value) by restricting competitive forces and on extracting profits in the marketplace (Mizik and Jacobson 2003). Consequently, firms that are not capable to restrict competitive forces by their managerial innovations are also unable to appropriate the value they have created by capabilities in technological innovations.

Research in marketing and strategic management has extensively explored how firm resources and capabilities affect business performance by adopting various types of strategic trade-offs that firms realize (e.g. archetypes provided by Miles and Snow 1978). Although, the trade-off between value creation and value appropriation capabilities has been acknowledged (March 1991), research to date has not explicitly explored the value adding effects of innovation capability on firm competitive superiority (Mizik and Jacobson 2003). In this concern, extant channel management literature has devoted only scant attention to strategic issues and to the assessment of the relative benefits of emphasizing one capability over another (Vorhies and Morgan 2003), while putting main interest on inter-firm links in marketing channels, and on such notions like power, commitment and trust (Heide 1994; Johnson 1999). Our study addresses this gap by examining the innovation-performance interplay within different channel environment contexts. To this end, we explore the extent of consequences of organizational innovation capability on the level of a firm's competitive superiority, and, further, whether the external contingencies involved affect this association.

Theoretical Frame of Reference: A Contingency Approach

Innovation is a key managerial process because it is linked to business performance (Sanchez 1995) and to means of survival in the face of competition and environmental uncertainty (Gronhaug and Kaufmann 1988). Innovation is also at the core of dynamic organizational capabilities (Teece et al. 1997). Nevertheless, after 30 years of research on innovation and

business performance, fundamental concepts and measures are often ambiguous, and, thus, there is substantial empirical confusion on the effects of different kinds of innovation on firm performance and competitive superiority (Gatignon et al. 2002; Weerawardena 2003). Moreover, a careful examination of the literature on innovation reveals, implicitly, that supply chain and channel environment are simply antecedents or phases of a value delivering process (e.g. Sudharshan and Sanchez 1998) that could be labeled channel driven innovation. Finally, if organizational innovation is to be tested as a key determinant in our conceptual model, a precise redescription of the innovation capability construct is required. Review of the extant marketing and organizational innovation literature provides such a conceptual foundation.

In marketing, the conventional meaning of the term innovation largely refers to 'a process of turning opportunities into new ideas and of putting these into widely used practice' (Tidd et al. 1997). Hence, the innovation focus in marketing literature has been predominately technology intensive (Han et al. 1998), whereas empirical evidence reinforce the claim that firms pursue both technological and managerial innovations and both types of innovation lead to competitive superiority (Weerawardena 2003). Moreover, a large number of factors affect the process of innovation, and, thus, there is a clear need for a better understanding of antecedents and consequences of innovation as the same factors can explain both success and failure (e.g. Sanchez 1995). This requires studying innovation with a broader scope. Several attempts have been made to enhance firm capabilities to accelerate the innovation process, for example, by introducing systematic ways of screening ideas (Lynn and Heintz 1992) followed by a stage-gate model of overhauling the innovation process (Cooper and Kleinschmidt 1995). A number of studies have also pointed out that interfunctional coordination is a prerequisite for a successful innovation process (Mukhopadhyay and Gupta 1998). Therefore, we suggest that the notion of organizational innovation capability should be split into two separate aspects or entities: *managerial innovation* and *technological innovation.* The

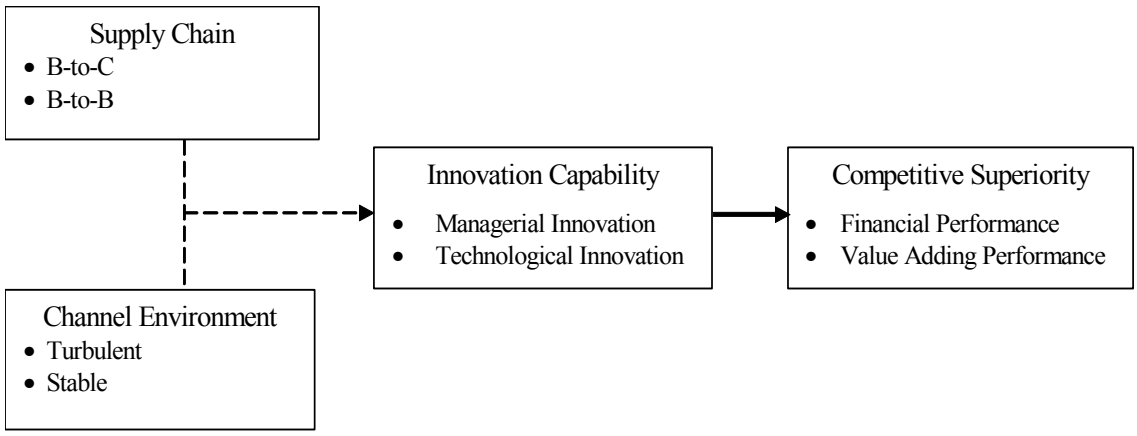
distinction is one of the most meaningful dichotomies in the field of innovation research. This can be argued by the fact that technological capabilities have been consistently highlighted in prior research as central to the value creation (value to customer) process, and managerial capabilities to the value appropriation (value to firm itself) process (Mizik and Jacobson 2003).

Managerial innovation involves new strategies and new organizational forms, which are indirectly related to basic business activities within an organization, whereas technological innovation pertains to product, service and process technology interrelated with these business activities (Damanpour 1991). The managerial vs. technological dichotomy has been shown to relate differentially to the same antecedents, as well as in its impact on organizational performance (Sanchez 1995). Han, Kim and Srivastava (1998) have endorsed that the rationale behind organizational innovativeness showing a strong, positive influence on business performance is ascribed to innovations that serve to accommodate the uncertainties a firm faces in its competitive environment. Given the speed with which innovations can be copied by rivals, it is reasonable to presume that some innovations, either managerial or technological, may be necessary to improve a firm's relative market posture, and, particularly, to achieve *competitive superiority* in terms of financial and value adding performance. However, firm performance and competitive superiority may depend more on the congruency between innovations of different types than each type alone (Damanpour 1991). More recently, when several technologies are needed to get access to key resources and capabilities, innovation processes have been carried out in a network employing both suppliers, customers, and other channel partners (Day 2000; Weerawardena 2003). In this respect, the efficiency of internal business processes is useless if the company is not taking into account channel partners' views and supply chain expectations (Sudharshan and Sanchez 1998). For firms, innovations often represent a means to deal with the evolving market structures and dynamics

of the environment. Prior research has acknowledged that potentially these external environmental factors affect the extent of the effects of organizational innovations on business performance (Han et al. 1998). In channel management literature, however, these issues are like a 'black box', and channel members' strategic postures have been traditionally considered through a surrogate B-to-C (consumer products) vs. B-to-B (business products) taxonomy (e.g. Frazier and Antia 1995). Therefore, investigating how the *supply chain* and *channel environment* affect the innovation dichotomy is of particular pertinence to our conceptual model.

All the preceding factors that appear also in Figure 1 as antecedents, determinants or consequences in our applied environment-strategy-value contingency model come from the vast literature on the characteristics of organizational innovations. A detailed review of all these studies is beyond the scope of this work but can be found in other studies (e.g. Damanpour 1991). To summarize, we argue that this new capabilities view integrates contextual, structural, processual, and outcome perspectives into the focal phenomenon under study.

FIGURE 1
Contingency Model: Environment-Strategy-Value Conduct



In our model, relationships between the contextual factors (antecedents) and the key input constructs are visualized with broken hairlines, while the linkages between the input factors (determinants) and output factors (consequences) are demonstrated with constant hairlines. Indeed, the arrows involved indicate the assumed direction of influence.

Hypotheses and Research Design

To recapitulate and summarize, managerial and technological innovation capabilities affect the level of the firm's competitive superiority in terms of excellent financial and value adding performance. Furthermore, both the rate of the dynamism in channel environment and the type of the supply chain committed influence the level of competitive superiority.

Hypotheses

Figure 1 outlines the hypothesized relationships, which are formally stated as follows:

H_1: The type and level of organizational innovation capability differ between high and low performers in competitive superiority.

H_2: Turbulent channel environment and B-to-B supply chain emphasize technological innovation capability, which, in turn, affect the level of firm competitive superiority.

H_3: Stable channel environment and B-to-B supply chain emphasize managerial innovation capability, which, in turn, affect the level of firm competitive superiority.

H_4: Turbulent channel environment and B-to-C supply chain emphasize technological innovation capability, which, in turn, affect the level of firm competitive superiority.

H_5: Stable channel environment and B-to-C supply chain emphasize managerial innovation capability, which, in turn, affect the level of firm competitive superiority.

In view of relatively limited *a priori* knowledge about the relationships between our key constructs, we are deploying in our discovery exploratory techniques instead of confirmatory approaches. Based on our theoretical foundations and research setting, we are assessing the extent to which the type and level of organizational innovation capability distinguish between firms characterized by high and low levels of competitive superiority. This requires a combination of analysis of variance and multiple two-group discriminant analysis to test our hypotheses and to generate a body of empirical evidence for the existence of significant differences in organizational innovation capability across the firms examined.

Research Context and Data Collection

Our survey was carried out in early summer 2002. The final questionnaire was mailed to 1400 firms in Finland from a sampling frame (supplied by TOY-Research Ltd., Finland) covering small, medium and large firms representing consumer products, business products, business services, and consumer services. In total 327 usable responses were received yielding a response rate of 24%. No significant differences in means were found between early and late respondents on the scales studied indicating that non-response bias is unlikely to be a problem. Similar studies are underway in other countries (e.g. UK, Ireland, Austria, Greece, Hungary, Poland, Australia and New Zealand) and at various stages of completion to allow the international robustness of the scales to be gauged.

Measures

While organizational innovation has been extensively researched in recent years (see e.g. Gatignon et al. 2000), capabilities in creating and appropriating value by innovations have not been systematically explored empirically. Following extensive review of the literature to specify the domains of the innovation capability and the competitive superiority constructs, and in-depth interviews with marketing managers in the UK, a number of capability and performance items were generated. The item pool was refined through expert opinion of marketing scholars in a number of European countries and following the analysis of the pilot data (UK and Austria) the seminal questionnaire was further refined.

Subsequently, the final questionnaire was developed deploying 12 *innovation capability* items generated through the above, hypothesized as two separate factors following the two proposed by several scholars (e.g. Damanpour 1991). Besides the above, the questionnaire consisted of 11 *competitive superiority* items - hypothesized as two separate factors based on the categorization by Day and Wensley (1988) - one set (5 items) for financial performance, the other set (6 items) for value-adding performance. All items were measured on a five point advantage scale, relative to major rivals. Moreover, we deployed two sets of dichotomous variables: one for the *channel environment* (turbulent vs. stable) - based on the scale provided by Miller (1987) - the other for the *supply chain* (B-to-B vs. B-to-C) derived from the identification (SIC) codes (business products vs. consumer products) involved in our survey.

Analysis and Results

Before submitting the data to the main analyses, basic psychometric tests were employed to provide evidence of the internal validity and reliability of the key scales adopted.

Scale Construction and Validation

Our purpose here is to develop and refine scales for assessing organizational innovation capability and competitive superiority. These were developed following the paradigm endorsed by Churchill (1979). First, initial purification of the items was undertaken employing exploratory factor analyses (EFA). In the case of innovation capability, two 'noisy' items were deleted due to low levels of communalities, and the EFA, using Kaiser criterion for factor extraction and Varimax rotation for factor interpretation, resulted in two distinct factors accounting for 53% of the variance in the original items. An in-depth analysis of the EFA results is reported in Table 1.

TABLE 1

Exploratory Factor Analysis (EFA) – Innovation Capability

	Rotated factor loadings	
Innovation capability items	Factor 1 Managerial	Factor 2 Technological
We are more innovative than our rivals in deciding what methods to use in achieving our targets and objectives	.91	
We are more innovative than our rivals in initiating new procedures or information systems	.88	
We are more innovative than our rivals in developing new ways of accomplishing our targets and objectives	.84	
We are more innovative than our rivals in initiating changes in the job contents and work methods of our staff	.72	
We are more innovative than our rivals in product technology and in developing new and qualitative products		.74
We are more innovative than our rivals in process technology and in developing new production processes		.66
We are more innovative than our rivals in deploying new technological modes in our business		.65
We are more innovative than our rivals in corporealizing and commercializing new product innovations		.61
We are more innovative than our rivals in exploiting information technology in our business		.53
We are more innovative than our rivals in deploying effectively a high standard R&D function		.46
Construct reliability*	.87	.69
Percent of variance extracted	34	19

*Chronbach alpha
V.A.F for by 2 factor solution = 53%

These two factors were readily interpretable in line with the theory as: *managerial innovation capability* and *technological innovation capability*. Chronbach alphas were computed for both scales and they were 0.87 and 0.69, respectively. Both are of relatively high level and acceptable (Hair et al. 1995).

In the case of competitive superiority construct, the EFA resulted in two diverse factors accounting for 62% of the variance in the original 11 items (EFA results are not analyzed here in-depth, but the items of performance advantages are presented in Table 2). The factors were interpreted analogously with the theory as: financial performance and value-adding performance. Alphas were computed for these scales respectively of: 0.80 and 0.88. In this inquiry, however, we are deploying these constructs unidimensionally, and the alpha for the new scale labeled *competitive superiority* was 0.88 indicating a high level of reliability and internal validity as reported in Table 2.

TABLE 2

Internal Validity and Reliability of the Competitive Superiority (SUPER) Scale

Scale	No of items	Mean	Standard deviation	Chronbach alpha	Item-to-total correlations										
					(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SUPER[a,b]	11	41.84	13.92	0.88	0.59	0.62	0.65	0.46	0.30	0.64	0.61	0.66	0.62	0.64	0.67

[a] financial performance: (1) profit level, (2) profit margin, (3) ROI, (4) sales volume, and (5) market share.

[b] value-adding performance: (6) customer satisfaction, (7) customer loyalty, (8) employee satisfaction, (9) employee retention, (10) social responsibility, and (11) shareholder satisfaction.

Innovation Capability - Performance Superiority Linkages: Evaluation of Hypotheses

To recapitulate, we argued that a strong positive association exists between organizational innovation capability and competitive superiority. A multivariate analysis of variance

(MANOVA) and one-way analysis of variance (ANOVA) were used to investigate the existence of links between the two components of innovation capability and the level of competitive superiority. To this end, firms were classified, as discussed previously, into two categories (high vs. low). First, MANOVA was employed to examine the equality of covariance matrices (overall association) between the components of innovation capability (MANAGER vs. TECHNO). Thereafter, ANOVA was utilized to analyze differences in dimensional means of MANAGER and TECHNO between the low and high performing firm groups (SUPER). The results, displayed in Table 3 (see also MANOVA summary) indicate that both dimensions of innovation capability are significantly different between the groups of low vs. high performing firms.

TABLE 3

Results of MANOVA, ANOVA, and Multiple Discriminant Analysis

Innovation capability scales	SUPER means		F-ratio	p-value	Discriminant loadings*
	Low	High			
MANAGER (managerial innovation)	3.23	3.76	14.75	0.000	0.69
TECHNO (technological innovation)	3.14	3.60	23.71	0.000	0.87

MANOVA summary**:** There are only two levels and the results of MANOVA are identical to the results of univariate tests of significance

* Pooled within-groups correlations between discriminating variables and standardized discriminant functions.

The ANOVA analysis was supplemented by examining the dimensional impact of innovation capability on group differences in competitive superiority through a two-group discriminant analysis. The discriminant loadings, depicted in Table 3, and the group centroids of low and high performing firms, displayed in Table 4, provide a summary of the results clearly supporting our hypothesis 1, i.e., innovation capability has a positive association with competitive superiority.

TABLE 4

Statistics of the Capability-Superiority Discriminant Function

Scale	Group centroids		Eigenvalue	Canonical correlation	Wilk's lambda*
	Low	High			
SUPER (competitive superiority)	-0.31	0.34	0.11	0.31	0.90

* Significant at (<0.001)

The discriminant model satisfied the independence assumption as the MANAGER and TECHNO scales were constructed by a factor analysis (EFA) with orthogonal rotation, and, thus, there is no multicollinearity between these scales. Although the model did not meet the assumption of equality of covariance matrices (MANOVA) between the two groups (Box's M=15.189; *F* with (3; 15003) df =5,0244; *p*< 0,002), the discriminant function is robust to this violation as the ratio between larger and smaller groups (155/141=1.099) is less than 1.5 (Hair et al. 1995).

Consistent with the findings of one-way ANOVA, the results of the two-group discriminant analysis confirm that both components of innovation capability are collectively and significantly distinguishing between the groups of low vs. high performing firms. Finally, the directions of the discriminant loadings are all positive, and the group centroid is negative for low performing firms, and positive for high performing firms. This is consistent with our main effects hypothesis 1.

Contingency influence on innovation-performance interplay

As previously discussed, we hypothesized that the effectiveness of the type of innovation capability is dependent on the type of the supply chain involved, and on the rate of the current dynamism in channel environment. To this end, the influence of the supply chain and channel environment is examined by employing a two-group discriminant analysis simultaneously in

two diverse contextual split-groups: supply chain (B-to-C vs. B-to-B) and channel environment (turbulent vs. stable). We designed a classical 2x2 matrix of the split-group results without violating the rules of a valid discriminant analysis.

The direction and magnitude of the impact of the two innovation capability components on overall group differences were assessed by employing a multiple discriminant analysis within each of those split-groups. Derived discriminant loadings, eigenvalues, canonical correlations, and group centroids for low and high performing firms are displayed in Table 5.

TABLE 5

Results of ANOVA, and Split-Group Effects Discriminant Analysis

Split-group factors	Supply chain: :	B-to-C				B-to-B			
	Channel environment::	Turbulent		Stable		Turbulent		Stable	
Discriminant loadings:*									
MANAGER (managerial innovation)		0.42 [a]		1.00		1.00		1.00	
TECHNO (technological innovation)		1.00		0.15		0.28		0.44 [a]	
Statistics of the discriminant functions:		Low	High	Low	High	Low	High	Low	High
Group centroids (Low vs. High SUPER)		-0.28	0.36	-0.27	0.36	-0.33	0.29	-0.42	0.34
Eigenvalue		0.10		0.10		0.10		0.15	
Canonical correlation		0.31		0.30		0.30		0.36	
Wilk's lambda		0.90		0.91		0.91		0.87	
n (Low vs. High SUPER)		28	22	25	19	43	49	44	55
ANOVA summary		*F-ratio*	*p-value*	*F-ratio*	*p-value*	*F-ratio*	*p-value*	*F-ratio*	*p-value*
MANAGER		0.10	0.757	4.22	0.046	8.62	0.004	14.11	0.000
TECHNO		5.03	0.030	1.62	0.210	0.40	0.529	3.15	0.079

* Pooled within-groups correlations between discriminating variables and standardized discriminant functions.

[a] This variable is not included in the discriminant function but exceeds the conservative interpretation (threshold +/-0.30) for an acceptable discriminant loading (Hair et al. 1995).

We developed the MANAGER and TECHNO scales through EFA with orthogonal rotation, and, thus, there is no multicollinearity between the scales satisfying the independence assumption of a discriminant analysis. Furthermore, each model also exceeds the threshold regarding the assumption of equality of covariance matrices (Hair et al. 1995).

In a nutshell, the derived discriminant functions are robust.

Relationships between the components of innovation capability (MANAGER and TECHNO) and competitive superiority (SUPER) were then assessed by employing a one-way ANOVA procedure. The univariate *F*-ratios indicate several significant differences between the SUPER groups across the MANAGER and TECHNO components within each split-group analysis. These findings are reported in Table 5 and discussed more detailed below.

When considering simultaneously the discriminant loadings and the ANOVA summary, a few remarks can be given. In the case of the *B-to-C* supply chain, technological innovation capability (TECHNO) differentiates significantly between the high and low SUPER groups if the current channel environment is *turbulent*, while managerial innovation capability (MANAGER) distinguishes between the two groups if the prevailing channel environment is *stable*. In the case of the *B-to-B* supply chain, managerial innovation capability (MANAGER) is the one and only discriminator between the two firm groups regardless of the current rate of dynamism in channel environment.

Briefly, our findings confirm the claim that the type of supply chain and the rate of the dynamism in channel environment influence the type and level of organizational innovation capability, and, further, the interplay between innovation capability and competitive superiority. Formally, these results provide strong empirical evidence for our hypotheses 3, 4 and 5, while hypothesis 2 is rejected.

Classification Results

In our final analysis we used the established discriminant functions to examine how well the components of innovation capability can predict the group membership of low vs. high performing firms involved. However, due to the limited number of cases in each of our split-groups, we did not follow the conventional split-sample approach. Instead, the U-method

proposed by Lachenbruch (1975) was employed as a technique to validate externally the results of our discriminant analysis. The technique concerned, focuses on assessing unbiased classification accuracy within discriminant analysis.

The classification results - reported in Table 6 - show that the proportion of original cases correctly classified by our main effects model was 66.9 %, and in the case as an estimator (cross-validated) 66.6%. Respectively, when considering our split-group discriminant models, the classification results of the original cases vary between 58.8-68.3%, and, in the case as an estimator, it classifies correctly new observations in the range of 58.6-68.1%. Due to the limited space the split-group classification results are not reported in detail here.

TABLE 6

Classification Results

SUPER (whole sample)		Predicted group*		
		Low	High	Actual total**
Original group	Low	102 (65.8%)	53 (34.2%)	155
	High	45 (31.9%)	96 (68.1%)	141
Cross-validated[1]	Low	101 (65.2%)	54 (34.8%)	155
	High	45 (31.9%)	96 (68.1%)	141

* 66.9% of originally grouped cases correctly classified, and 66.6% of cross-validated grouped cases correctly classified.

** Proportional change criterion $(155/296)^2 + (141/296)^2 = 50.1\%$, and Maximum change criterion $(141/296) = 47.6\%$.

As far as the proportional change and maximum change criteria are concerned (see Table 6), our main discriminant model exceed the thresholds computed for this study. In the case of our split-group discriminant models the computed thresholds are also exceeded (proportional change criteria respectively of 50.7%, 50.5%, 46.6% and 50.7%, and maximum change

[1] In cross-validation, each case is classified by the function derived from all cases other than that case.

criteria in the range of 44.0%, 53.3%, 41.3% and 55.6%). Hence, it can be argued that the main and the split-group discriminant functions are valid instruments in the sense of the accuracy with which they can be used to classify firms with a low and high level of competitive superiority in terms of differences in their type and level of innovation capability.

Discussion and Conclusions

This study contributes on our understanding of the interplay between innovation capability and superior business performance in the context of distributive trade. Our results clearly support the basic argument, innovation capability is a key prerequisite for success in business performance. In this process, the supply chain adopted and the prevailing channel dynamism influence the key processes of value creation and value appropriation. A successful adaptation to ever changing channel conditions needs a clear recipe for deployment of organizational innovation capability, thus, enhancing added value for customers and for the firm itself. Therefore, the adopted recipe (managerial and technological) acts as a strategic determinant in this concern.

We provide strong empirical evidence for prior demonstrations (Sanchez 1995; Gronhaug and Kaufmann 1988) that innovation capability positively influences firm competitive superiority and survival under uncertain conditions in channel environment. We also reaffirmed that innovation capability, as a vital requisite for superior performance, warrants firm attention for successful implementation of both managerial and technological kinds as formerly forwarded by several scholars (see e.g. Gatignon et al. 2002; Weerawardena 2003). Our results for the innovation-performance link not only underscore the separate contributions of managerial and technological innovations to firm competitiveness but also lend support to synergies between the two types of capabilities enhancing firm superior performance. These findings reinforce Damanpour's (1991) recommendation that a firm must take a balanced

approach to innovations for optimal results. Our study also shows that the emphasis a firm places on managerial innovation capability relative to technological one indicates its value appropriation dominance relative to value creation. This is in line with the arguments endorsed by Mizik and Jacobson (2003). Moreover, our results reinforce the claim (Han et al. 1998) that external contingencies strongly affect the innovation-performance interplay.

Empirical evidence has been obtained from a small open economy, where both market and technology uncertainties have been the hallmark within distributive trade. In this respect, small, medium, and large firms representing either consumer products (B-to-C) or business products (B-to-B) were chosen as the unit of analysis and vehicle for examining the innovation-performance interplay. We argued that there is a strong positive association between the key constructs. Moreover, the influence of our contingency factors was examined within two split-groups simultaneously. The procedure provided a classical 2x2 matrix of the split-group results revealing that the focal phenomenon is channel specific. Accordingly, in B-to-B context, firms tend to relay on managerial innovation capability in conjunction with value appropriation regardless of the prevailing competition and environmental uncertainties. On the contrary, in B-to-C context, and in turbulent channel conditions, firms rest on technological innovation capability to sustain their value creation ability, while in stable channel conditions firms realize a value appropriation strategy through managerial innovation capability. The point is of an environment-strategy-value conduct as visualized in Figure 2.

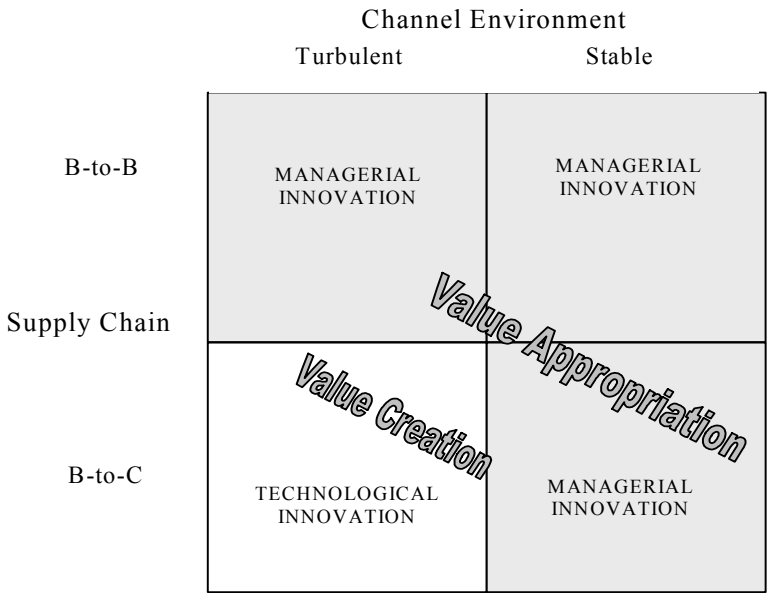
Indeed, our study has contributed to bridging the gap between the research traditions in this particular field. Furthermore, it provides a promising metaphor and taxonomy for channel management scholars to address the competitive superiority of the firm through value creation and value appropriation processes in organizational innovation. Besides, we have also shed some light on measurement issues in this concern.

We crystallize the implication recipe for management as follows: “To survive and remain

vital in turbulent channel environment, companies - committed, especially, to B-to-C supply chains - need to focus on consumers and on creating value through technological capabilities, i.e., corporealizing and commercializing product, service, or process innovations.“ These are real managerial challenges within our rapidly evolving information era. Therefore, future research should facilitate this endeavor by delving into the management’s ‘black box’ and by discovering the role of the supply chain and channel strategy as the key drivers for a superior organizational innovation, and, further, for competitive superiority.

FIGURE 2

Effective Means of Organizational Innovation Capability in Competitive Superiority



As a consequence of this study, we note some limitations, which in turn offer opportunities for additional work. First, our results are based on a sample drawn from one nation, and, thus, more cross-national research is needed to insure the generalizability of the associations examined.

Second, the multivariate methods adopted do not allow, on one hand, the determination of causality, and, on the other, the assessments of lagged effects of causes on consequences. Therefore, more rigorous techniques (confirmatory analyses in conjunction with structural equation models) are needed to verify our conceptual model developed and causal links identified. Last but not least, the data utilized in this study may be biased in terms of managerial attitudes measured by Likert-type scales reflecting a single informant's perceptions rather than actual organizational behavior, which can reduce the reliability and validity of the data.

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