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Supply Chain Orientation and Balanced Scorecard Performance

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A recent *Journal of Managerial Issues* article noted that “the purpose of strategic management research is to learn why some organizations outperform others and then convey this knowledge to managers” (Crook *et al.*, 2006: 409). In an effort to serve this purpose, the focus of our study is on how firms’ approaches to supply chain management can shape performance. Supply chains are linkages of actors that collectively convert raw inputs into completed products (Mabert and Venkataraman, 1998). Some of these links cross firm boundaries, while others remain inside a single

firm. Firms such as Dell, Toyota, and TaylorMade have created significant advantages over their rivals, in part, based on developing superior supply chains (Boyer *et al.*, 2004). On the other hand, poor supply chain management often has serious negative consequences. For example, a recent study revealed that the emergence of major supply chain problems typically reduces a firm’s shareholder value by over ten percent (Hendricks and Singhal, 2003).

Although supply chains have long been viewed as a means to enhance performance in neighboring fields

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such as marketing, logistics, and operations management, it has attracted little attention from strategic management scholars. In an effort to shed new light on why some firms outperform others, we build on strategy theory and research to examine the concept of *supply chain orientation* (e.g., Hult, 2004). A supply chain orientation is defined as the extent to which there is a predisposition among chain members toward viewing the supply chain as an integrated entity and on satisfying chain needs in an integrated way. This predisposition can arise when chain members develop shared values and beliefs centered on the importance of the overall supply chain, not just on their specific functional area. Drawing on the resource-based view (RBV) of the firm, we posit that supply chain orientation is a strategic capability (Black and Boal, 1994; Godfrey and Hill, 1995) that contributes to competitive advantage and positively influences organizational performance.

In assessing performance, we respond to calls to consider broader sets of outcome performance criteria than has been customary (e.g., Kaplan and Norton, 1996). In particular, we examine whether or not a supply chain orientation is related to the four dimensions of the Balanced Scorecard: customer performance, financial performance, internal process performance, and innovation and learning performance (Kaplan and Norton, 1996; Maiga and Jacobs, 2003). Whereas internal process performance (i.e., speed, quality, cost, and flexibility of a particular supply chain process (Hult *et al.*, 2004)) is directly tied to supply chains, the other three dimensions reflect broader issues that may or may not be closely tied to supply chain practices

(cf. Mabert and Venkataraman, 1998). Thus, there is value in uncovering the extent to which supply chains shape these important metrics.

We examine the links between supply chain orientation and performance using data from 129 firms. Our article is intended to offer two main contributions to the literature. The first is introducing and developing the concept of *supply chain orientation*. The second contribution is offering initial empirical insight into how supply chains can enhance firm performance outcomes.

THEORY AND HYPOTHESES

Resource-based View of the Firm

We rely on the resource-based view (RBV) of the firm as our study's theoretical foundation. A basic tenet of the RBV is that top-performing firms are those that are able to develop, obtain, and/or exploit strategic resources — firm assets that are rare, valuable, difficult to imitate or substitute and organizationally activatable (Barney, 1991; Wernerfelt, 1984). Resource-based view precepts note that resources that possess the aforementioned characteristics are those that can be utilized to build competitive advantages for firms. Another important quality of resources that influences their ability to contribute to competitive advantage deals with resource tangibility. Tangible resources often have physical substance and can be easily transferred across context and location, while intangible resources are tacit and difficult to define and transfer (Barney, 1991; Vilalonga, 2004). These qualities of intangible assets make them rarer and more difficult to imitate or sub-

stitute than tangible resources. As a result, intangible resources are viewed as the key building blocks for building and maintaining a firm's competitive advantage (Itami, 1987; Villalonga, 2004).

Another important and relevant extension of RVB research deals with resource bundling. Resource bundling research (e.g. Black and Boal, 1994; Teece *et al.*, 1997) proposes that firms build competitive advantages not through the deployment of any one resource, but through the combining of tangible and intangible resources to create performance-enhancing capabilities. Applying the capabilities perspective to this study, we propose that supply chain orientation is a capability created by combining tangible resources such as integrated Information and Knowledge Management Systems between supply chain partners to maximize chain efficiency and knowledge-sharing activities, with intangible resources such as firm cultures and value systems organized around establishing win-win relationships with firm buyers and suppliers, knowledge sharing and creating relationships across the chain, and sharing of best practices within the chain. In addition, since supply chain orientation is based largely in firm intangible resources, this orientation provides members with the potential to build sustainable competitive advantages.

Supply Chain Orientation

We contend that a supply chain orientation can serve as a strategic capability for a firm. As described above, firms with a robust supply chain orientation have members that are strongly inclined toward viewing the supply chain as an integrated en-

tity and on satisfying chain needs in an integrated way. Building on the RBV's insights on intangibility, our expectation is that this orientation arises and evolves in large part through tacit ways that firm members struggle to articulate (Reed and DePhillipi, 1990). This intangibility presents a challenge to researchers wishing to measure the concept. In response, Godfrey and Hill (1995) suggest tapping observable variables that indirectly reveal unobservables. Two previous studies have done so. Hult and Ketchen (2001) examined the role of an intangible "positional advantage" in shaping performance among multinational firms. Hult, Ketchen and Nichols (2002) studied how "cultural competitiveness" shapes supply chain cycle time. We add to this line of inquiry by offering supply chain orientation as a strategic capability within supply chains that influences firm outcomes. Following the two previous studies, we first develop predictions explaining how tangible indicators reflect our hypothesized strategic capability. We then propose how supply chain orientation results in positive performance.

Indicators of a Supply Chain Orientation

Examination of the literature on supply chains led us to identify six potential first-order indicators of supply chain orientation, founded in five scholarly areas of inquiry — strategic management, marketing, supply management, logistics, and operations management. As shown in Figure I, these six indicators are: customer orientation, competitor orientation, value-chain coordination, supplier orientation, logistics orientation, and operations orienta-

tion. While other indicators may be possible, we focus on these six because of their established conceptual links to the supply chain's functioning in a holistic role within a firm (e.g., Boyer *et al.*, 2004; Closs and Mollenkopf, 2004). We consider each of these six indicators as separate capabilities that together form the supply chain orientation construct, and posit supply chain orientation as an essential capability for today's firms, as well as a strong contributor to firm competitive advantage development (Porter, 1980).

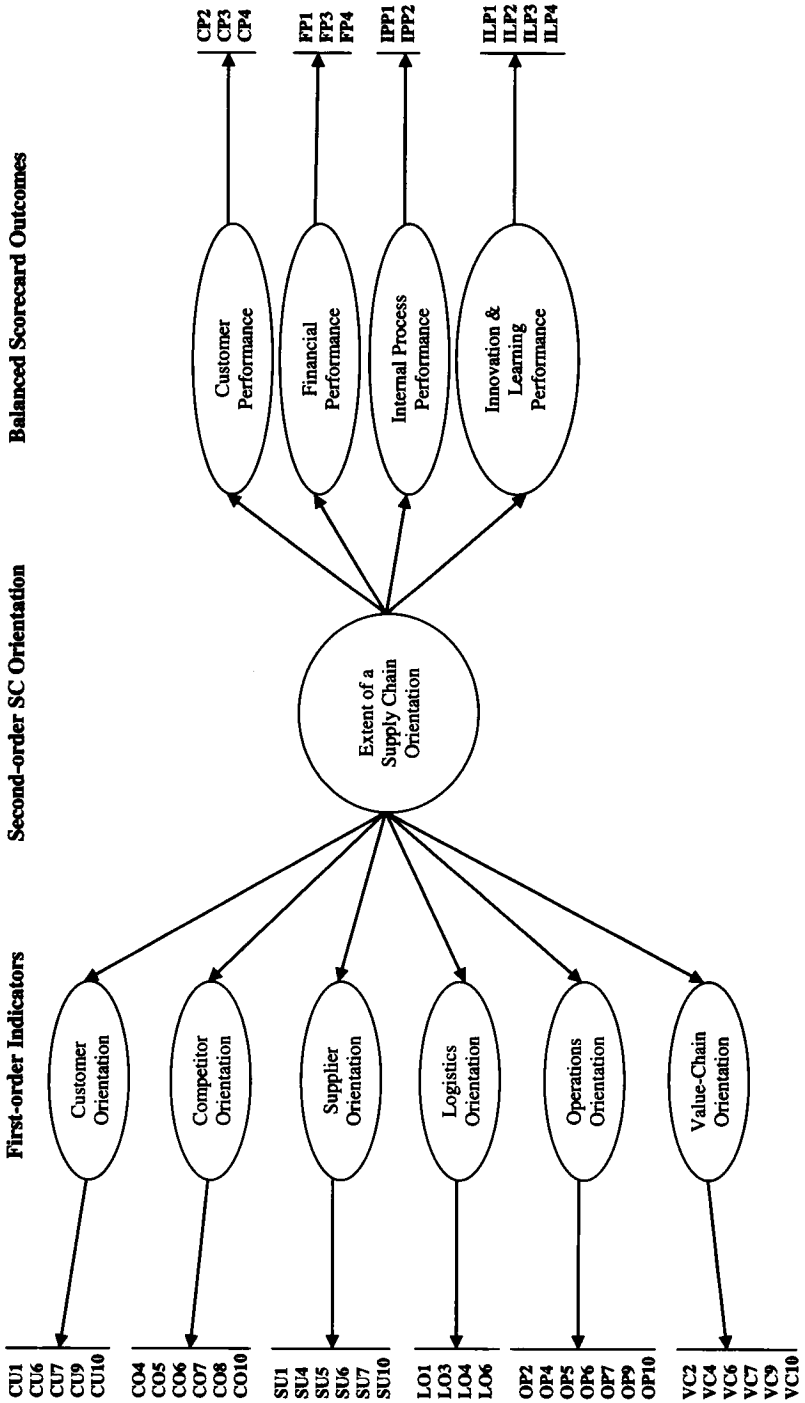
The first three constructs — customer orientation, competitor orientation, and value-chain coordination — are drawn from the strategic marketing and management literatures, in particular from research by Narver and Slater (1990) on “market orientation.” A *customer orientation* is viewed as the sufficient understanding of a firm's target customers to be able to create superior value for them continuously; it requires that a firm understands a customer's entire value-chain, as it is today and as it will evolve over time. A *competitor orientation* refers to understanding the short-term strengths and weaknesses of current rivals as well as the long-term capabilities of key current rivals and potential future new entrants. Such a competitor orientation also enables the transfer of supply chain best practices from competitors to internal supply chain linkages through activities such as benchmarking. *Value-chain coordination* refers to the integrated use of resources at each sequential step of the chain as well as between functional areas, and facilitates the effectiveness of product and process flows within and across firms (Porter, 1980).

Supply management (e.g., purchasing, procurement, and sourcing), the foundation of a *supplier orientation*, refers to the processes that enable the progress of value from raw material to final user and back to re-design and final disposition (Institute of Supply Management, 2007). Logistics management, the foundation of a *logistics orientation*, involves planning, implementation, and controlling the efficient and effective flow and storage of goods, services, and information from the point of origin to consumption in order to meet customers' needs (Council of Supply Chain Management Professionals, 2007). Traditionally, supply management emphasized the inbound/upstream portion of the supply chain while logistics focused on the outbound/downstream portion. However, these functional boundaries have blurred over the years and an integration of supply chain functions is becoming critically important to achieve superior firm success. Finally, operations management is the foundation for an *operations orientation*; it refers to the design, operation, and desire for improvement of the production system that creates the firm's primary products, services, and accompanying information (Kaynak, 2005; Mabert and Venkataraman, 1998).

Building on the tenets of the resource-based view, we contend that each of these six constructs is a required, but not alone adequate, condition for the emergence of an intangible resource-based capability we have labeled “supply chain orientation.” As such, we hypothesize:

H1: The constructs of: (a) customer orientation, (b) competitor orientation, (c) supplier orientation, (d) logistics orientation, (e) operations orientation, and (f)

Figure I
Supply Chain Orientation and Balanced Scorecard Outcomes



value-chain coordination are first-order indicators of supply chain orientation.

Supply Chain Orientation and Outcomes

As noted above, the RBV asserts that sustained competitive advantages and enhanced performance are driven by firms' ability to develop and exploit resources and capabilities that are rare, valuable, and difficult to imitate or substitute (Barney, 1991; Black and Boal, 1994; Teece *et al.*, 1997). We argued above that supply chain orientation serves as a strategic capability. As such, the RBV suggests that a supply chain orientation will positively affect desired outcomes. While much available evidence focuses narrowly on how certain supply chain resources can shape supply chain cycle time (Hult *et al.*, 2002), we take a step forward by focusing on each of the four dimensions of the Balanced Scorecard (Kaplan and Norton, 1996; Maiga and Jacobs, 2003) to assess the antecedent-value of a supply chain orientation (i.e., customer performance, financial performance, internal process performance, and innovation and learning performance). As such, we incorporate the four "competitive priorities" of speed, cost, flexibility, and quality of the order fulfillment process in the chain from the operations management literature as a part of internal process performance (e.g., Boyer and Lewis, 2002).

We also address issues related to learning, adaptability, and efficiency in operations management via the scorecard's innovation and learning dimension (Bordoloi *et al.*, 1999). The "customer performance" dimension of the scorecard has been advocated for a number of years in

the operations management literature (Rust and Chase, 1999) and has recently been increasingly emphasized as a potential weapon (Boyer and Metters, 2004) in a firm's arsenal to achieve superior performance. Finally, "financial performance" is the ultimate objective for most firms (Hendricks and Singhal, 2003). Overall, the inclusion of the balanced scorecard as the performance focus broadens the performance implications of strategic supply chains (Albright and Lam, 2006; Tersine, 2004). In particular, we test the following predictions:

H2: The strategic capability labeled as supply chain orientation is positively related to: (a) customer performance, (b) financial performance, (c) internal process performance, and (d) innovation and learning performance.

METHOD

Sample

We used a sample drawn from *Dun and Bradstreet Information Services* (D&B). The focus of the analysis was the strategic business unit. We did not look at corporations as a whole because they each have supply chains that are widely varied. Senior corporate executives were targeted as key informants in assessing the six dimensions of a supply chain orientation, the four Balanced Scorecard outcomes, and a set of demographics. Prior to collecting the data, pretests with eight senior executives were conducted to assess the face validity of the scale items and the general quality of the research design. This resulted in minor modifications to the wording of some items as well as some revisions to the survey instructions.

The data collection was undertaken online and consisted of a sam-

pling frame of 1,000 CEOs, presidents, and vice presidents (whomever was the top executive at each unit). Instead of sampling supply chain managers, we opted to use senior executives because the focus of the study was the whole chain as opposed to a specific part of the chain. An original email and a follow-up request one week after the initial contact were used to encourage participation in the study (each email included a description of the study, a hyperlink to the website for the survey, a promise of anonymity of responses, and an option to receive a report of the findings). Of the executives targeted, 129 responded, reflecting an effective response rate of 15.5% (166 surveys were non-deliverable), which slightly exceeds the 12-14% typically obtained in executive surveys (Hambrick *et al.*, 1993). These individuals represented companies that, on average, had existed for 35 years, employed 3,261 people, and operated in more than 28 countries.

The extrapolation procedure by Armstrong and Overton (1977) was used to assess non-response bias. No significant differences were found between the early quartile ($N = 32$) and the late quartile ($N = 32$) of the respondents on the summated constructs and demographics included in the survey. Thus, non-response bias does not appear to be an inhibitor in the data.

Measures

The Appendix contains the measures employed in this study. For the orientations, the conceptual development for the construction of the items drew from work in supply chain management (e.g., Boyer *et al.*, 2004) as well as the functional fields of sup-

ply management (e.g., Williams, 1995), logistics (e.g., Ellinger *et al.*, 2002), operations management (e.g., Hult *et al.*, 2002), and marketing (e.g., Narver *et al.*, 2000). For the Balanced Scorecard items, we drew mainly on work by Kaplan and Norton (1996). Based on theory and previous research, each subjective scale incorporated a comprehensive set of reflective items to capture the designated construct. Seven-point Likert scales were used for all measures. Table 1 reports the correlations, means, average variances extracted, reliabilities, loadings, and fit indices.

Overall, the ten constructs, involving 46 purified items, were found to be reliable and valid in the context of this study. The details of the measurement analysis are discussed in the remainder of this section. After the data were collected, we assessed the scales' reliability and validity. The psychometric properties were evaluated via a confirmatory factor analysis (CFA) using LISREL 8.80. Next, unidimensionality and discriminant validity of the constructs were assessed by examining each possible pair of constructs in a series of two-factor CFA models using LISREL 8.80 (Bagozzi and Phillips, 1982).

The model fits were evaluated using the DELTA2 index, the relative noncentrality index (RNI), the comparative fit index (CFI), and the normed fit index (NFI), which have been shown to be the most stable fit indices by Gerbing and Anderson (1992). The CFA model resulted in a good fit to the data with DELTA2, RNI, and CFI all being .93, and the NFI at .90 (Table 1). Also, after deleting the poorer-fitting items (see the Appendix for items retained as well as those that were deleted), the final set of 46 purified items was found to be relia-

Table 1
Correlations and Summary Statistics of the Measurement Analysis (N = 129)

Variables	Means	Variance Extracted	Composite Reliability	Factor Loadings	Correlations ^a														
					1	2	3	4	5	6	7	8	9						
1. Customer Orientation	5.94	71.8%	.93	.86 to .93															
2. Competitor Orientation	5.34	75.0%	.95	.81 to .98	.72														
3. Supplier Orientation	5.16	73.0%	.94	.83 to .95	.72	.75													
4. Logistics Orientation	5.32	76.5%	.93	.85 to .96	.70	.76	.87												
5. Operations Orientation	5.47	79.6%	.96	.90 to .97	.86	.72	.82	.74											
6. Value Chain Coordination	5.40	78.2%	.96	.86 to .96	.78	.76	.92	.90	.93										
7. Customer Performance	5.06	44.3%	.70	.59 to .81	.17	.09	-.16	-.01	-.05	-.13									
8. Financial Performance	4.50	77.0%	.91	.87 to .95	-.05	-.16	-.30	-.17	-.22	-.30	.77								
9. Int. Process Performance	4.80	76.5%	.87	.89 to .95	.02	-.02	-.19	-.09	-.18	-.20	.86	.87							
10. I & L Performance	4.97	76.3%	.93	.85 to .99	.24	.09	.02	-.13	.01	.03	.73	.67	.76						

^aAll correlations above .12 are significant at the p < .05 level.

Fit Statistics
 χ^2 3,308.37
 Degrees of Freedom 944
 Delta2 ($\Delta 2$) .93
 CFI .93
 RNI .93
 NFI .90

ble and valid when evaluated based on each item's error variance, modification index, and residual covariation (Fornell and Larcker, 1981).

Within the CFA setting, composite reliability was calculated using the procedures outlined by Fornell and Larcker (1981). We also examined the parameter estimates and their associated t-values, and assessed the average variance extracted for each construct (Anderson and Gerbing, 1988). The composite reliabilities ranged from .70 to .96 (Table 1). The factor loadings ranged from .59 to .99 ($p < .01$), and the average variances extracted ranged from 44.3% to 79.6% (Table 1).

Discriminant validity was assessed by analyzing all possible pairs of constructs in a series of two-factor CFA models using LISREL 8.80 (Bagozzi and Phillips, 1982). Each model was run twice — once constraining the phi coefficient (ϕ) to unity and once freeing this parameter. A chi-square (χ^2) difference test was then performed on the nested models to assess if the χ^2 values were significantly lower for the unconstrained models. The critical value ($\Delta\chi^2_{(1)} > 3.84$) was exceeded in all cases (see Table 2 for complete discriminant validity results). Thus, the measures were found to be reliable and valid in the context of this study.

Finally, we assessed the potential for common method bias (CMB) in our dataset. We used a confirmatory factor-analytic approach to Harmon's one-factor test to assess whether CMB would be problematic in the testing and interpretation of the results. The rationale for this test is that if CMB poses a serious threat to the analysis, a single latent factor would account for all manifest variables. A worse fit for the one-factor model would sug-

gest that common method variance does not pose a serious threat (Sanchez *et al.*, 1995). The one-factor model yielded a $\chi^2 = 5836.55$ with 989 degrees of freedom (compared with the $\chi^2 = 3,308.37$ and $df = 944$ for the measurement model). As such, the fit is considerably worse for the unidimensional model than for the measurement model, suggesting that common method bias is not a serious threat in the study.

RESULTS

Testing of the relationships was accomplished through a higher-order structural equation analysis via the use of LISREL 8.80. This analysis resulted in a good fit to the data ($\chi^2 = 3,986.48$, $df = 979$, $DELTA2 = .91$, $RNI = .91$, $CFI = .91$, $NFI = .88$).

All hypotheses were supported in the analysis ($H1_{a-f}$ and $H2_{a-d}$). As such, customer orientation (loading = .86, t-value = 10.74, $R^2 = .74$), competitor orientation (loading = .66, t-value = 7.05, $R^2 = .44$), supplier orientation (loading = .81, t-value = 8.79, $R^2 = .65$), logistics orientation (loading = .93, t-value = 11.90, $R^2 = .87$), operations orientation (loading = .81, t-value = 9.50, $R^2 = .66$), and value-chain coordination (loading = .92, t-value = 11.33, $R^2 = .85$) function as first-order indicators of the higher-order latent variable of supply chain orientation ($p < .01$).

This strategic supply chain capability, in turn, has a direct positive effect on each of the four Balanced Scorecard outcomes, including customer performance (loading = .44, t-value = 4.44, $R^2 = .19$), financial performance (loading = .24, t-value = 2.59, $R^2 = .06$), internal process performance (loading = .58, t-value = 6.02, $R^2 = .34$), and innovation and learn-

Table 2
Discriminant Validity Analysis:
Pairwise Analysis of Study Constructs

Pair of Constructs		χ^2_{free}	χ^2_{fixed}	$\Delta\chi^2_{(df = 1)}$	Sign
Customer Orientation	Competitor Orientation	1082.12	911.61	170.51	p < .01
Customer Orientation	Supplier Orientation	1888.03	1455.76	432.27	p < .01
Customer Orientation	Logistics Orientation	650.21	560.14	90.07	p < .01
Customer Orientation	Operations Orientation	1766.54	1521.77	244.77	p < .01
Customer Orientation	Value Chain Coordination	1608.54	1233.09	375.45	p < .01
Customer Orientation	Customer Performance	349.87	224.23	125.64	p < .01
Customer Orientation	Financial Performance	643.20	291.52	351.68	p < .01
Customer Orientation	Internal Process Perf.	342.87	199.88	142.99	p < .01
Customer Orientation	Innov & Learning Perf.	936.94	467.48	469.46	p < .01
Competitor Orientation	Supplier Orientation	1778.33	1033.25	745.08	p < .01
Competitor Orientation	Logistics Orientation	946.33	605.47	340.86	p < .01
Competitor Orientation	Operations Orientation	2024.58	1264.71	759.87	p < .01
Competitor Orientation	Value Chain Coordination	1826.18	1020.72	805.46	p < .01
Competitor Orientation	Customer Performance	594.46	457.20	137.26	p < .01
Competitor Orientation	Financial Performance	921.87	564.11	357.76	p < .01
Competitor Orientation	Internal Process Perf.	428.34	288.38	139.96	p < .01
Competitor Orientation	Innov & Learning Perf.	1351.74	756.06	595.68	p < .01
Supplier Orientation	Logistics Orientation	1285.71	890.95	394.76	p < .01
Supplier Orientation	Operations Orientation	1539.70	979.42	560.28	p < .01
Supplier Orientation	Value Chain Coordination	1243.48	935.02	308.46	p < .01
Supplier Orientation	Customer Performance	430.05	276.98	153.07	p < .01
Supplier Orientation	Financial Performance	784.38	425.33	359.05	p < .01
Supplier Orientation	Internal Process Perf.	336.71	214.92	121.79	p < .01
Supplier Orientation	Innov & Learning Perf.	915.38	615.14	300.24	p < .01
Logistics Orientation	Operations Orientation	1500.14	1049.64	450.50	p < .01
Logistics Orientation	Value Chain Coordination	804.22	615.88	188.34	p < .01
Logistics Orientation	Customer Performance	324.26	195.20	129.06	p < .01
Logistics Orientation	Financial Performance	542.08	192.08	350.00	p < .01
Logistics Orientation	Internal Process Perf.	390.91	260.27	130.64	p < .01
Logistics Orientation	Innov & Learning Perf.	713.81	288.14	425.67	p < .01
Operations Orientation	Value Chain Coordination	1449.56	1055.31	394.25	p < .01
Operations Orientation	Customer Performance	605.35	459.14	146.21	p < .01
Operations Orientation	Financial Performance	1236.96	879.06	357.90	p < .01
Operations Orientation	Internal Process Perf.	697.98	547.91	150.07	p < .01
Operations Orientation	Innov & Learning Perf.	1072.11	637.92	434.19	p < .01
Value Chain Coordination	Customer Performance	627.86	477.77	150.09	p < .01
Value Chain Coordination	Financial Performance	885.28	527.65	357.63	p < .01
Value Chain Coordination	Internal Process Perf.	479.07	341.82	137.25	p < .01
Value Chain Coordination	Innov & Learning Perf.	1047.12	734.53	312.59	p < .01
Customer Performance	Financial Performance	226.32	222.20	4.12	p < .05
Customer Performance	Internal Process Perf.	98.75	58.10	40.65	p < .01
Customer Performance	Innov & Learning Perf.	281.96	225.67	56.29	p < .01
Financial Performance	Internal Process Perf.	189.11	56.79	132.32	p < .01
Financial Performance	Innov & Learning Perf.	457.76	174.53	283.23	p < .01
Internal Process Perf.	Innov & Learning Perf.	177.09	96.61	80.48	p < .01

ing performance (loading = .83, t -value = 9.14, $R^2 = .69$).¹

As an additional test of the hypothesized model, we also examined a structural equation model, whereas customer orientation, competitor orientation, supplier orientation, logistics orientation, operations orientation, and value-chain coordination were affecting each outcome directly. This "direct" SEM model failed to converge, lending strong support to the higher-order model in Figure 1. Thus, the model is structurally the most appropriate given the constructs studied. Finally, based upon reviewer recommendations, we agree that reporting the results of the second-order model may add some value to the article. We opted not to do the CFA-based second-order model given that it is directly tested within the SEM model. However, the results for the first-order factors when analyzed in the second-order model are customer = .90, competitor = .90, supplier = .77, logistics = .95, operations = .82, and coordination = .91 (CFI = .90). In addition, the direct effects model performs worse than the higher-order model in that in the 24 direct effects (6 orientations \times 4 performance outcomes), only one orientation (logistics) is significantly affecting an outcome (financial performance). Thus, 23 of the 24 relationships are not significant in a direct fashion.

DISCUSSION

Our study offers two primary contributions to the Management re-

search literature. The first is introducing the *supply chain orientation* concept. Supply chain orientation was depicted as a strategic capability that is centered on the extent to which there is a predisposition toward viewing the supply chain as an integrated entity and on satisfying chain needs in an integrated way. In support of Hypotheses 1_{a-f}, the results show that customer orientation, competitor orientation, supplier orientation, logistics orientation, operations orientation, and value-chain coordination are each important tools for revealing this strategic capability. At the same time, the logistics orientation and value-chain coordination are the strongest first-order indicators within the six-dimensional supply chain-orientation framework. One potential implication for managers is that logistics and value chain could be treated as areas of particular emphasis if a firm is struggling to create a supply chain orientation. This does not mean that the other four areas should be ignored, but rather that prioritizing logistics and value chain might be productive in the initial development of a supply chain orientation. Also, our results may be indicative of a reciprocal relationship between supply chain orientation and performance, such that initial success in building up the more tangible elements of supply chain orientation (logistics and value chain) may trigger improved performance, leading to increased investments in the more intangible dimensions of supply chain orientation (customer orientation, competitor orientation, supplier

¹ We attempted to include objective data (e.g., ROI, ROA, EPS) one year after the survey was conducted but only 23 of the 129 firms had such data available in public form. A sample size of $N = 23$ is insufficient to conduct the higher-order testing required to assess the hypotheses. Thus, we opted to stay with the perceptual outcomes only.

orientation, and operations orientation).

The second contribution of our study is adding to the knowledge base about a central question — why do some firms outperform others (e.g., Crook *et al.*, 2006)? As Kaplan and Norton (1996) and others have shown, customer performance, financial performance, internal process performance, and innovation and learning performance are key elements of firm success (Maiga and Jacobs, 2003). We found that a supply chain orientation not only affected internal process performance, as might be expected, but it also affected the other three elements that reflect overall firm performance. These results are encouraging in that firms focused on developing a strong supply chain orientation stand to benefit both at the supply chain level examined in other studies, such as with order fulfillment (Hult *et al.*, 2004) and cycle time (Hult *et al.*, 2002), and at the firm level investigated here. Our results also contribute to the body of literature demonstrating the usefulness of integrating supply chain research with theories such as the resource-based view of the firm. This is particularly valuable in light of critiques of the RBV's applicability for strategic management empirical research (Priem and Butler, 2001a, 2001b).

Our study is subject to certain limitations. First, we used one informant per supply chain. Data from multiple chain members may have offered additional insights about our variables of interest. Our use of cross-sectional data prevents us from establishing causality or from revealing whether there is a lag between the achievement of supply chain orientation and improved outcomes. Finally, all of

our data were survey-based. However, our diagnostic tests mitigated the resultant concerns about potential common method bias.

One fruitful area for future research deals with the debate on zero-sum versus positive-sum interactions within buyer/supplier value chain relationships (Benton and Maloni, 2005). The zero-sum perspective implies that there are always winners and losers within supply chain exchanges due to power differences within the dyadic interactions, while the positive-sum perspective implies that “a rising tide lifts all boats” — the initiation of mutual cooperation, knowledge exchange, and support between supply chain dyads can create a win-win situation for both regardless of power differences across the dyads (Cox, 2004). Our findings offer some indirect support for the positive sum perspective of supply chain interactions, where developing a supply chain orientation among buyers and suppliers leads to stronger customer relationships, learning and innovation, and overall financial performance. While this study focuses on individual firm supply chain orientations rather than dyadic relationships between supply chain partners, one of our future goals involves studying and testing the relative merits of the positive-versus zero-sum perspectives of supply chains in dyadic partnerships.

Another related issue for future research is whether a supply chain orientation can be taken too far. More specifically, is it possible for chain members to become so focused on the chain level and what is good for the chain that they make themselves vulnerable to opportunism on the part of more aggressive chain members? If so, at what intensity does ad-

ditional supply chain orientation become less help and more hindrance?

For managers, our results suggest that a supply chain orientation, which stresses integration of functions instead of a focus on silos (e.g., logistics managers solely focusing on the function of logistics management), should become a priority within supply chain operations. If so, traditional views that hold that logistics managers should be trained mainly in logistics practices should be abandoned.

Instead, effective managers will be those trained in a variety of functions. More importantly, mechanisms for integration across functions need to be at the center of supply chain management practices. Indeed, if, as Handfield and Nichols (2003) and Ketchen and Giunipero (2004) argue, future competition will be increasingly "chain vs. chain" rather than "firm vs. firm," then the importance of a supply chain orientation will grow over time.

APPENDIX: Measures

Customer Orientation

We believe that it is important to:

- CU1 constantly monitor our commitment to serving customer needs as a part of our value chain activities.
- CU2 communicate information about customer experiences across all units as a part of our value chain activities.¹
- CU3 develop value chain strategies based on our understanding of customers' needs.¹
- CU4 measure customer satisfaction systematically and frequently as a part of our value chain activities.¹
- CU5 disseminate data on customer satisfaction at all levels on a regular basis as a part of our value chain activities.¹
- CU6 help our customers, as a part of our value chain activities, be prepared for developments in their markets.
- CU7 try to discover additional needs of our customers, as a part of our value chain activities, of which they may be unaware.
- CU8 seek opportunities, as a part of our value chain activities, in areas where customers have difficulty expressing their needs.¹
- CU9 try to recognize customer needs, as a part of our value chain activities, before the majority of the market recognizes them.
- CU10 extrapolate key trends, as a part of our value chain activities, to understand what customers will need in the future.

Competitor Orientation

We believe that it is important to:

- CO1 constantly monitor our commitment to understanding competitors as a part of our value chain activities.¹
- CO2 communicate information about competitors across all units as a part of our value chain activities.¹
- CO3 develop value chain strategies based on our understanding of competitors.¹

- CO4 assess competitors systematically and frequently as a part of our value chain activities.
- CO5 disseminate data on competitors at all levels on a regular basis as a part of our supply chain activities.
- CO6 understand our competitors, as a part of our value chain activities, to be prepared for developments in our markets.
- CO7 try to discover additional actions of our competitors, as a part of our value chain activities, of which we may be unaware.
- CO8 seek opportunities, as a part of our value chain activities, in areas where our competitors have difficulty delivering to customers.
- CO9 try to recognize competitor actions, as a part of our value chain activities, before the majority of the market recognizes them.¹
- CO10 extrapolate key trends, as a part of our value chain activities, to understand what competitors may do in the future.

Supplier Orientation

We believe that it is important to:

- SU1 constantly monitor our commitment to understanding suppliers as a part of our value chain activities.
- SU2 communicate information about suppliers across all units as a part of our value chain activities.¹
- SU3 develop value chain strategies based on our understanding of suppliers.¹
- SU4 assess suppliers systematically and frequently as a part of our value chain activities.
- SU5 disseminate data on suppliers at all levels on a regular basis as a part of our value chain activities.
- SU6 understand our suppliers, as a part of our value chain activities, to be prepared for developments in our markets.
- SU7 try to discover additional actions of our suppliers, as a part of our value chain activities, of which we may be unaware.
- SU8 seek opportunities, as a part of our value chain activities, in areas where our suppliers have difficulty delivering to us.¹
- SU9 try to recognize supplier actions, as a part of our value chain activities, before the majority of the market recognizes them.¹
- SU10 extrapolate key trends, as a part of our value chain activities, to understand what suppliers may do in the future.

Logistics Orientation

We believe that it is important to:

- LO1 constantly monitor our commitment to understanding our logistics activities as a part of our value chain activities.
- LO2 communicate information about our logistics activities across all units as a part of our value chain activities.¹
- LO3 develop value chain strategies based on our understanding of our logistics activities.
- LO4 assess our logistics activities systematically and frequently as a part of our value chain activities.
- LO5 disseminate data on our logistics activities at all levels on a regular basis as a part of our value chain activities.¹

- LO6 understand our logistics activities, as a part of our value chain activities, to be prepared for developments in our markets.
- LO7 try to discover additional logistics possibilities, as a part of our value chain activities, of which we may be unaware.¹
- LO8 seek opportunities, as a part of our value chain activities, in areas where our current logistics function has difficulty delivering to customers.¹
- LO9 try to recognize logistics possibilities, as a part of our value chain activities, before the majority of the market recognizes them.¹
- LO10 extrapolate key trends, as a part of our value chain activities, to understand what logistics activities we may need in the future.¹

Operations Orientation

We believe that it is important to:

- OP1 constantly monitor our commitment to understanding our operations management activities as a part of our value chain activities.¹
- OP2 communicate information about our operations management activities across all units as a part of our value chain activities.
- OP3 develop value chain strategies based on our understanding of our operations management activities.¹
- OP4 assess our operations management activities systematically and frequently as a part of our value chain activities.
- OP5 disseminate data on our operations management activities at all levels on a regular basis as a part of our value chain activities.
- OP6 understand our operations management activities, as a part of our value chain activities, to be prepared for developments in our markets.
- OP7 try to discover additional operations management possibilities, as a part of our value chain activities, of which we may be unaware.
- OP8 seek opportunities, as a part of our value chain activities, in areas where our current operations management function has difficulty delivering for us.¹
- OP9 try to recognize, as a part of our value chain activities, operations management possibilities before the majority of the market recognizes them.
- OP10 extrapolate key trends, as a part of our value chain activities, to understand what operations management activities we may need in the future.

Value-chain Coordination

We believe that it is important to:

- VC1 constantly monitor our coordination of value chain functions.¹
- VC2 coordinate information about our value chain activities across all units.
- VC3 coordinate strategies based on understanding of our value chain activities.¹
- VC4 coordinate our value chain activities systematically and frequently.
- VC5 coordinate data on our value chain activities at all levels on a regular basis.¹
- VC6 coordinate our value chain activities to be prepared for developments in our markets.
- VC7 coordinate our value chain activities to try to discover additional possibilities of which we may be unaware.

- VC8 coordinate opportunities in areas where our value chain function has difficulty delivering for us.¹
- VC9 try to coordinate value chain possibilities before the majority of the market recognizes them.
- VC10 extrapolate key trends to coordinate what value chain activities we may need in the future.

Customer Performance

- CP1 We achieved a high degree of global customer satisfaction in the last year.¹
- CP2 We kept a large number of existing global customers in the last year.
- CP3 We attracted a significant number of new global customers in the last year.
- CP4 We secured a large portion of our desired global market share in the last year.

Financial Performance

- FP1 We achieved revenues above our stated objective in the last year.
- FP2 We achieved sales above our stated objective in the last year.¹
- FP3 We achieved return on investments above our stated objective in the last year.
- FP4 We achieved return on assets above our stated objective in the last year.

Internal Process Performance

- IPP1 The speediness of our supply chain processes improved in the last year.
- IPP2 The quality of our supply chain processes improved in the last year.
- IPP3 The cost of our supply chain processes improved in the last year.¹
- IPP4 The flexibility of our supply chain processes improved in the last year.¹

Innovation and Learning Performance

- ILP1 We significantly enhanced our marketing skills compared with last year.
- ILP2 We significantly enhanced our logistics skills compared with last year.
- ILP3 We significantly enhanced our supply management skills compared with last year.
- ILP4 We significantly enhanced our operations management skills compared with last year.

¹ Item deleted in the measurement purification process.

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relationship in which IT capability indirectly (via customer orientation) and interactively (with intra-organizational trust and information systems services quality) improves business performance. We ground this model in the Socio-Technical View, and test it through a survey of 189 executives in a wide range of firms and industries. Our findings largely support the model, indicating that IT capability has both indirect and contingent effects. From these results, we draw managerial and research implications.

A Knowledge-based View of IPO Success: Superior Knowledge, Isolating Mechanisms, and the Creation of Market Value 507
Seung B. Bach, William Q. Judge and Thomas J. Dean

Initial public offerings (IPOs) are theoretically-interesting and economically-important organizational events. Unfortunately, there is little agreement by organizational scholars about what determines IPO success. Using the knowledge-based view of the firm, we frame the IPO as a culminating event in which the market value created by the venture becomes evident and indicates the magnitude of its success. We theorize that IPO success is predicted by: (1) superior knowledge possessed by the top management team of the entrepreneurial firm and (2) isolating mechanisms that are expected to preserve competitive advantages. After studying 103 computer-related IPOs, we find relatively strong support for the predictions offered by the knowledge-based view where multiple predictors for superior knowledge and isolating mechanisms are correlated with IPO success in the predicted direction. Specifically, this study shows: (1) the importance of superior knowledge extends beyond the founder to other members of the firm and (2) the role of knowledge-based isolating mechanisms as ex-post limits to competitions. Overall, this study offers new insights for those scholars interested in the knowledge-based view as well as for managers preparing for IPOs.

Supply Chain Orientation and Balanced Scorecard Performance 526
G. Tomas M. Hult, David J. Ketchen Jr., Garry L. Adams and Jeannette A. Mena

Supply chains are thought to be important weapons in the firm's competitive arsenals. To date, however, scant research

attention has been devoted to uncovering how and to what extent supply chain characteristics shape important firm outcomes. Drawing on the resource-based view, this study examines the links between a higher-order latent construct we label supply chain orientation and four Balanced Scorecard outcomes: customer performance, financial performance, internal process performance, and innovation and learning performance. The results indicate that: (1) customer orientation, competitor orientation, supplier orientation, logistics orientation, operations orientation, and value-chain coordination function as first-order indicators of supply chain orientation and (2) supply chain orientation is positively related to all four performance dimensions. For researchers, the results suggest that the supply chain orientation concept is a valuable addition to their conceptual toolbox. The primary implication for managers is that firms that develop a strong supply chain orientation will outperform those that do not.

<p>The Role of Dispositions in Politics Perception Formation: The Predictive Capacity of Negative and Positive Affectivity, Equity Sensitivity, and Self-efficacy.....</p> <p><i>Garry L. Adams, Darren C. Treadway and Lee P. Stepina</i></p>	<p>545</p>
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Few studies in organizational politics literature have examined the role that dispositions play as antecedents to perceptions of politics. Much of the existing work that has examined the relationship between dispositions and perceptions of politics has modeled dispositional traits as moderating variables between perceived politics and work-related outcomes such as tension and job satisfaction. Utilizing dispositional factors as antecedents to perceptions of politics, the current study evaluates the hypotheses that negative affectivity, positive affectivity, equity sensitivity, and self-efficacy directly influence perceptions of politics formation and development. Findings support the consideration of dispositions as antecedents to political perceptions formation. The practical implications of this study and directions for future research are also offered.