



**NORTHERN ARIZONA
UNIVERSITY**
The W. A. Franke College of Business

**When electronic management tools work - and
don't work - in social-based distribution channels:
A study of IT manufacturers and resellers**

Working Paper Series—09-16 | July 2009

Nick Lee

Senior Lecturer, Aston University

David I. Gilliland*

Associate Professor of Marketing
Colorado State University and Aston University

Daniel C. Bello

Roundtable Research Professor of Marketing
Georgia State University

Talai Osmonbekov

Assistant Professor of Marketing
Northern Arizona University

* Contact Author: Department of Marketing, Colorado State University, Fort Collins, CO
80523-1278, Ph: 970-491-5224, Fax: 970-491-5956, dave.gilliland@colostate.edu

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1. Introduction

The importance of the social relationship in explaining channel behaviors has been clearly established. Researchers studying social norms, bilateral relationships, informal structures, and similar manifestations of social exchange have demonstrated how they keep relationships on track, reduce opportunistic behaviors, and improve performance (e.g., Heide and Wathne, 2006). These advantages have been identified in the managerial literature as well (Rackham, Friedman, and Ruff, 1996).

Of interest in this study is how social channel relationships might be affected by the introduction of electronic information as a management tool. Our interest emanates from researchers' continued focus on partnering as a solution to control problems, and from manufacturers' increasing use of electronic channel management tools. At issue is that these tools may constrain the social dimension of a relationship by introducing unilateral information (that is, the information is directed hierarchically from one side of the relationship towards the other). While real-time information regarding, for instance, shipments, lead tracking, and reseller promotional budgets is useful it is not known whether the provision of information in an electronic form actually benefits the execution of the channel. In fact, both academics and practitioners have speculated that such informational tools may have detrimental effects, resulting in suboptimal channel management (e.g., Cooper, Gwin, and Wakefield, 2008). Curiously, parallel problems have been documented in the project management literature (e.g., Chiocchio, 2007), where scholars have identified electronic information's link to "recent accounts of alarmingly high and worsening project failure rates" (p. 98).

Considering the importance of electronic tools to both channels research (Cooper, et al. 2008) and practice (Lager, 2007), this paper uses electronic communications theory (McKeen and Smith, 2004; Paulson and Naquin, 2004) in conjunction with governance and control theory (Ellickson, 1987) to study the point of intersection between electronic channel management information and social channel relationships. In a broad sense, electronic channel management information includes all electronic communications between manufacturers and resellers. However, to narrow the focus of the study and to increase its managerial relevance we concentrate on the types of electronic tools that are typically used in online partner relationship management (PRM) programs. PRM tools, which were designed for manufacturers to coordinate tasks with their channel intermediaries, have steadily grown in popularity, generating \$1.4 billion in sales during 2006 alone (Band, 2007). Specialized software and web portals developed by firms such as SAP, Seibel Systems and Oracle link information related to products, pricing, sales execution, order fulfillment, inventory control, deal registration and contract renewal management with remote reseller locations, providing real time status updates and work process management.

In conducting this study we hope to contribute to the channels literature in three important ways. First, we analyze and develop a framework for understanding two important forms of electronic information generally included in electronic channel management systems: demand-specific information and supply-specific information. Second, using an information context logic we consider how unilaterally delivered electronic information moderates an existing social governance approach. This argument considers both the information itself, and the social context in which it is used. Third, we describe how electronic information supports, or does not support, resellers' and manufacturers' ability to work together to accomplish specified tasks. The differences in effectiveness are based on whether information motivates a dialogue between the actors, or simply specifies rules and procedures that one actor is expected to adopt.

We evaluate the effectiveness of electronic information management tools in regards to three important channel outcomes: coordination, adaptation, and conflict. This allows conclusions to be drawn on whether information content delivered in an electronic format supports the manufacturer's governance efforts. We test this model on 216 value-added resellers (VARs) of information technology (IT) equipment, commenting on their manufacturer's electronic channel management systems.

The information technology industry was chosen as the study context due to its advanced familiarity and use of electronic management information. Although some IT manufacturers sell direct in limited applications, their path to the market is typically mediated by VARs, who tend to focus on a particular geographic territory, industry, and/or product application. VARs are typical of most channel resellers in that they represent multiple manufacturer's products and services, and their focus is more toward external customer relationships and environments rather than on satisfying the specific demands of their suppliers. In summary, we concentrate on how IT manufacturers utilize electronic information to attempt to coordinate their VAR channel.

2. Electronic information and governance in a distribution channel

2.1 Channel information

While rigorous examination of electronic channel management information is relatively new, scholars have analyzed the use of information delivered via non-electronic modes for some time. Information is a key aspect of organizational learning, allowing firms to make sense of current conditions and gain competitive advantage (Sinkula, 1994). Regarding how information is used, most channels studies have focused on communication and influence strategies (e.g., Fisher, Mohr, and Nevin, 1996; Payan and McFarland, 2005). In relationships where information is bilaterally exchanged, we find more successful channel outcomes in terms of commitment, satisfaction, trust, conflict reduction, and channel coordination (see Palmatier, Scheer, and Steenkamp, 2007). This is primarily because information exchange provides both parties with an integrated information set, helping them make sense of complex situations and, thus, make more effective decisions (Weick, Sutcliffe, and Obstfeld, 2005).

On the other hand, information use is not always associated with positive outcomes. From a learning perspective, as organizational memory grows, new information is treated as less important and may often be ignored, misinterpreted, distorted, or selectively used (Hogarth and Makridakis, 1987). Further, when the information is unilateral in nature it has been associated with asymmetric power, non-relational exchange, formal control strategies, and coercive influence attempts (Payan and McFarland, 2005).

2.2 Electronic channel information

Contemporary communications theory informs how electronic channel management information is utilized. Electronic information is periodically provided by the manufacturer to the reseller in real time. It has the ability to enhance existing communications networks by increasing the speed and amount of information transferred, expanding the breadth of people and organizational functions which have access to information, reducing the costs of information transfer, and augmenting the connectedness of different parts of an organization, which allows for complex linkages amongst organizational actors (Amami and Beghini, 2000; Fulk and DeSanctis, 1995). These advantages of information in an electronic format support thinking in new ways and the execution of new tasks (McKeen and Smith, 2004).

On the other hand, communications researchers caution organizations regarding how they apply electronic information. In particular, such information is typically "thin" and lacking of contextual detail (Chiocchio 2007). It is also asynchronous and nonverbal, which Mohr and Nevin (1990) describe as negative characteristics of channel information exchange. Also, working with a faceless contact makes information more difficult to interpret because of a lack of verbal and non-verbal cues.

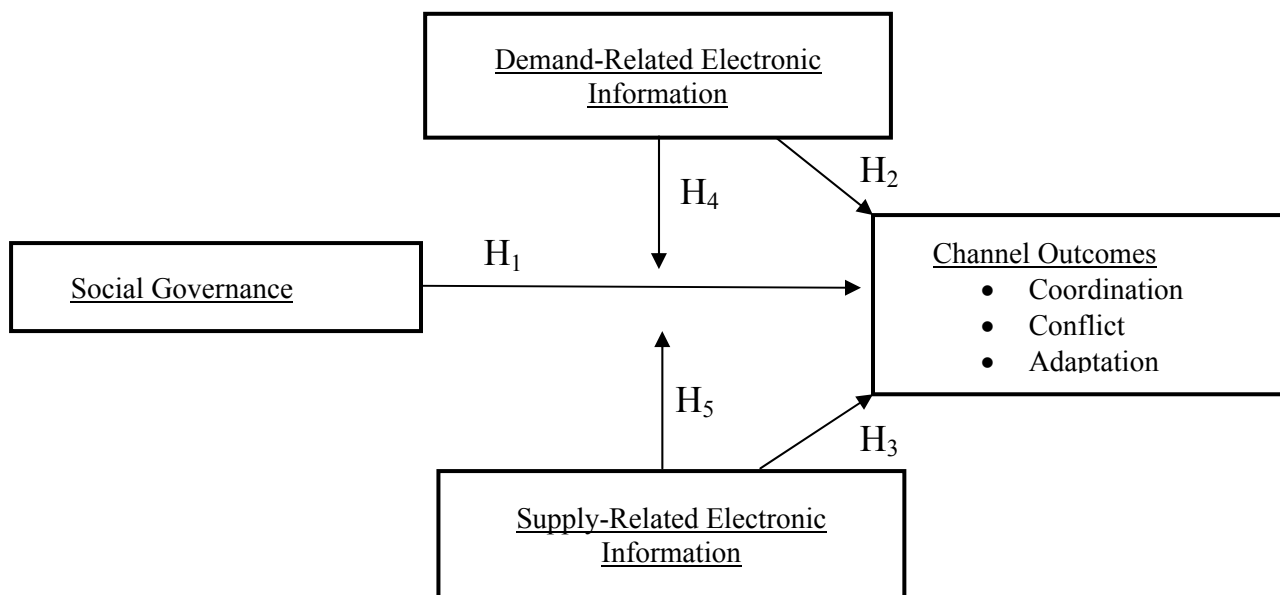
Today's electronic channel management systems provide information that is designed to address day-to-day managerial problems through the use of demand-related information and supply-related information, which are also referred to as transaction-creating services and physical-fulfilling services (Frohlich and Westbrook, 2002). Following this framework, *demand-related electronic information (DEI)* includes coverage of activities that are intended to stimulate transactions with the reseller's downstream customers. In doing so the information must support alignment of complex joint behaviors of the manufacturer and the reseller. To that end DEI provides a base set of information that enhances an ongoing dialogue focused on solving problems in the field. As such it is applicable across a variety of task alignment needs related to the generation of demand such as advertising and promotions, lead generation and processing, attainment of customer satisfaction, sales calls, sales training, pricing, and

customer service information. On the other hand, *supply-related electronic information (SEI)* supports the manufacturer’s control of the reseller’s logistics function, typically emphasizing cost reduction and other activities intended to ensure adequate physical fulfillment of a manufacturer’s products. These supply tasks include order fulfillment, inventory control, back order status and other supply management activities. Because of the manufacturer’s focus on the quality of its product the information available in SEI tools is more directive of the rules and procedures that must be followed to protect the manufacturer’s brand. Thus, unlike DEI, SEI does not motivate a problem-solving dialogue to benefit both sides of the dyad as much as it provides direction for the reseller to accommodate the manufacturer’s brand.

3. Conceptual framework

To understand how electronic content affects channel outcomes we examine DEI and SEI within an existing governance structure. Our conceptual model is described in Figure 1.

Figure 1: Conceptual Model



3.1 Social governance and channel outcomes

For this study we adopt a social approach to control (Ellickson, 1987). Social governance is founded in the common values that exist between channel partners, which is the basis for developing flexibility, tolerance, and other factors that guide the relationship. The social nature of the exchange is particularly important to the evolution of the relationship. Lusch and Brown (1996) find that the informal nature of contracts – sometimes referred to as “soft contracts” – allows the relationship to change in response to external challenges. These expectations eventually stabilize and represent the implicit understanding channel members adopt about one another’s behavior. *Social governance* relies on established patterns in the relationship to administer and adhere to the agreements that guide the relationship (Gilliland and Manning, 2002). Social governance keeps the relationship on track by bilaterally communicating and sharing information to maintain alignment in the face of problems. Mutual solutions are available because intentions are transparent and firms tend to willingly adjust.

Channel managers manage in order to attain stable relationships, which are commonly characterized as those with a high degree of coordination and low levels of conflict (Achrol and Stern, 1988). Within a channel, it is the shared nature of the tasks that give rise to the need for coordination among actors. In this context, *coordination* is the extent that channel tasks are performed in a consistent and coherent manner (Crowston, 1997). *Conflict* is the extent of disagreements experienced between

channel members that arise from incompatibility of actual and desired responses regarding these tasks (Fisher, et al. 1996). Finally, *adaptability* is the ability of the channel partnership to adjust the performance of tasks to changing conditions (Quinn and Rohrbaugh, 1983). Adaptability, conceptually fashioned from the need to maintain flexibility in the face of threats, considers how channel partners are able to rapidly reconsider the processes and interdependencies needed to perform channel tasks.

4. Hypotheses

Social governance coordinates the relationship through bonds that implement prior agreements and keep the parties honest in dealing with one another (Fehr and Gächter, 2000). It encourages the free exchange of information to support the alignment of tasks and responsibilities. The information exchanged is typically rich in content because it tends to be face-to-face, allowing better clarification and fewer misunderstandings (Mohr and Nevin, 1990). Because social governance rests on the notion of relevant information, tasks are more readily aligned and implemented, coordinating the relationship between the two parties.

Social governance keeps conflict in check because strong social bonds allow the parties to deal with misaligned goals. Principals of right action specify permissible limits on appropriate behavior (Lorenz, 1999), and the free exchange of information allows the resolution of differences. Thus, even though the partners may have incompatibilities they are able to amicably settle discrepancies and work out joint solutions (Wilkins and Ouchi, 1983).

Regarding adaptation, social governance prompts the rapid sharing of complex market intelligence, allowing trading partners to act seamlessly when faced with threats. Information exchange allows the partners to commit time and attention to mutual marketing efforts and overcome hurdles such as competitive action or changes in market conditions. Bilateral information exchange provides rapid learning of new facts (Sinkula, 1994) that organizations can apply to adaptation challenges. Thus,

- H1a:** Social governance is *positively related* to channel coordination
- H1b:** Social governance is *negatively related* to channel conflict
- H1c:** Social governance is *positively related* to channel adaptation

DEI typically includes information designed to both support the reseller's acquisition of business. Given the broad nature of the reseller's markets, customers, and needs, DEI is typically applicable across a wide range of applications. DEI is provided in a unilateral fashion, and unilateral governance processes have been found to coordinate tasks because, among other things, they are useful to increasing demand in the reseller's market (Holmstrom and Milgrom, 1994). DEI allows a large amount of pertinent information to be delivered in real time, giving the reseller immediate status updates. This allows the reseller to make more accurate and quicker task decisions, supporting coordination of the manufacturer's channel. The nature of DEI is to support coordination of tasks to benefit demand in the market

On the other hand, unilateral governance has also been found to increase conflict (Prendergast, 2002), particularly in a downstream setting. This is because electronic management tools, like any unilaterally provided information, are hierarchical and control based (Fulk and DeSanctis 1995), often requiring a shift in the reseller's customer strategy to maximally benefit from their use (Koh, et al. 2008). Not only is the reseller likely to balk at a required strategic change, but this information frames the basis of monitoring and the earning of incentives, which are also sources of disagreement.

Adaptation is enhanced by DEI because the information is both high in frequency and straightforward in nature, not requiring additional time to decipher or interpret (Paulson and Naquin 2004). This allows the partners to react and respond more rapidly to both expected and unexpected situations. Thus,

- H2a:** DEI is *positively related* to channel coordination
- H2b:** DEI is *positively related* to channel conflict
- H2c:** DEI is *positively related* to channel adaptation

Unlike channel demand information, supply information is not related to supporting the coordination of tasks to motivate external selling opportunities, but on controlling how the reseller executes tasks as specified by the manufacturer. Given that the nature of SEI is typically focused on the internal dyadic relationship, it supports the manufacturer's ability to control inventory, logistics, and spoilage of its goods. Thus, SEI is tightly focused on the logistics considerations for the manufacturer's product, having little direct application outside that context. However, to diversify risk resellers in IT and other industries represent multiple brands (Rubin, 1990), sometimes carrying hundreds or even thousands of SKUs. The sheer number of different brands and products carried typically causes resellers to adopt a single comprehensive internal logistics policy that may not align with any single manufacturer's requirements (Gundlach, et al. 2006). More importantly, policy researchers have found that formalized and rule-specific means of control do not motivate collaborative behaviors, which are necessary for the reseller to accomplish its channel tasks (Gilliland and Manning 2002). Instead, rule specific electronic communications tends to isolate the parties, which in a channel situation does not influence channel outcomes. Following this logic we hypothesize the following null relationships,

H3a: SEI is *not related* to channel coordination

H3b: SEI is *not related* to channel conflict

H3c: SEI is *not related* to channel adaptation

A common characteristic of socialized governance relationships is that information exchanged is pertinent to the parties' shared situation (Ring and Van de Ven, 1994). Electronic information can positively or negatively affect a social structure depending on the content of the tools and the social network using the tools (Zack and McKenney, 1995): "whether or not computer mediated communication will improve or even influence organizational performance ... may depend on the particular social circumstances under which these electronic media are employed" (p. 395). Because communication, even electronic communication, is a social act, the nature of the social network is influential in its ability to enhance successful interaction amongst users. Further, Poole and DeSanctis (1990, p. 177), discussing electronic communications, state, "no matter what features are designed into a system, users mediate technological effects, adapting systems to their needs, resisting them, or refusing to use them at all." Thus, despite how sophisticated the tools may be, whether they are useful is as much a function of the users as it is a function of the tools.

Our moderation logic is based on the extent that electronic communications can either build rapport amongst users or, depending on the context of the communications situation, build resistance to their use. We contend that DEI tools, because they are task oriented, enhance the ability of both manufacturer and reseller to work together to mutually accomplish tasks. Task-centered information helps the reseller execute specific activities under the purview of the manufacturer. The reseller is able to deal with DEI from multiple manufacturers because the reseller can apply each set of information to its general marketing program. Although there may be some resistance to the goals themselves, accomplishment of the actual tasks is supported by DEI. Constant and effective information allows joint decision making and serves the purpose of not only control but performance. Because information inherent in the electronic tools enhances communication the tools build rapport amongst the actors, strengthening the already-existing social network.

At low levels of DEI the social relationship still exchanges other information to coordinate the relationship, to reduce conflict, and to increase adaptation. As DEI increases there is additional information to support reseller tasks. In other words, this information supports the operation of the social governance mechanism, because it is seen as helpful and relevant to task alignment (Fisher, et al. 1996). DEI enhances the ability of social governance to coordinate the relationship because it is timely, relevant, and applicable to reseller business acquisition (Osmonbekov, Bello, and Gilliland, 2002). This additional information allows the partners to more effectively coordinate their relationship than at a low level of DEI.

Regarding conflict, the social norms of the exchange allow the parties to deal effectively with the information because it is task-centered. As DEI increases, the ability for social governance to decrease

conflict is strengthened, because the frequency of information allows the partners to take quick and effective action to solve problems as they arise. Thus, a higher level of DEI supports social governance's reduction of conflict. Likewise, DEI enhances the ability of the social governance mechanism to promote adaptation because the information can be immediately applied in the field. As the level of DEI increases the partners have more new information on how to react to market challenges.

- H4a:** When DEI is high, the positive relationship between social governance and channel coordination is *stronger* than when DEI is low
- H4b:** When DEI is high, the negative relationship between social governance and channel conflict is *stronger* than when DEI is low
- H4c:** When DEI is high, the positive relationship between social governance and channel adaptation is *stronger* than when DEI is low

SEI is not focused on mutual accomplishment of field tasks; rather SEI consists of directive information internal to the dyad on how the manufacturer wishes to control the reseller's specific tasks. Manufacturers are keen for resellers to follow logistics directives in order to protect their product from improper shipping and warehousing techniques. Unfortunately, the reseller also receives similar directives from other suppliers, forcing information overload, which, because there is inadequate chance to respond, naturally leads to resistance to control in electronic environments (McKeen and Smith 2004; Paulson and Naquin 2004).

From a governance perspective, resistance to the manufacturer's attempts to establish rules and procedures can be referred to as "obstacles to information exchange" (Casciaro and Piskorski 2005, p. 175). In fact, we expect SEI to disrupt the ongoing social relationship between the manufacturer and the reseller because it distracts the partners from accomplishing mutual channel tasks. Thus, SEI generally hinders the social governance mechanism because it is seen as rule-specific and less applicable to task alignment.

Drawing from the above logic, as the level of SEI rises, the social relationship experiences problems as goal-related misunderstandings and questions of control become more frequent. The ability of the social governance mechanism to coordinate the channel is reduced because the reseller resists adjusting its own tasks to the manufacturer's unilaterally established rules (Gilliland and Manning 2002). Conflict is also less effectively reduced by social governance because SEI detracts from establishing a dialogue to solve problems. Finally, the ability for social governance to enhance adaptation is impeded because SEI is internally focused and does not support the reseller's ability to address problems in its downstream markets. Thus,

- H5a:** When SEI is high, the positive relationship between social governance and channel coordination is *weaker* than when SEI is low
- H5b:** When SEI is high, the negative relationship between social governance and channel conflict is *weaker* than when SEI is low
- H5c:** When SEI is high, the positive relationship between social governance and channel adaptation is *weaker* than when SEI is low

5. Methodology

5.1 Research context and sample

The IT industry was chosen as the setting for this study because many participants, such as Hewlett-Packard and Microsoft, have used online channel management tools for some time, and industry VARS are quite familiar with electronic information exchange. We took many steps to understand online channel management and the research setting, and to develop the DEI and SEI items. First, an in-depth scan of the literature was conducted. Second, the researchers made an extensive visit to one of the leading PRM developers to study how the included electronic managerial information in their products. During the visit the functionality of its management packages was analyzed and demonstrations of products were observed. Third, 25 field interviews were conducted with VAR purchasing and marketing managers to understand how governance information was used. Fourth, an online pilot study was

conducted on 28 additional VAR managers to understand more about item response. In addition to taking the survey the respondents provided insights and feedback on the questionnaire layout and provided support for using key informants as they demonstrated a strong working knowledge of manufacturer-provided e-business tools.

Where possible, questionnaire items (see Item Appendix) were adapted from previous studies and have received prior use and validation. Social governance, which measures how endogenously-derived agreements structure and guide a relationship, was sourced from Gilliland and Bello (2002). Adaptation, which measures a firm’s ability to adjust to changing environments, was sourced from Quinn and Rohrbaugh’s (1983) study on firm performance. Coordination is taken from Cheng (1983), which describes the construct as an outcome of channel interactions (as opposed to a process). Finally, conflict was adapted from Fisher, et al. (1996). Conflict is treated as an extent of conflicting behavior, and is neither functional nor dysfunctional *per se*.

Given the expertise of the respondent, data was collected via an online questionnaire. The sampling frame, which included 4342 executives from computer integrators and VARs (SIC 7373), was purchased from a national provider of business leads and information. After cleaning the list it was reduced to approximately 1700. Executives were contacted by phone and qualified to ensure they engaged in online channel interaction with their manufacturers. Specifically, the potential respondents were asked, “Do you use manufacturer websites in your dealings with this manufacturer?” After qualification 614 prospects were emailed a link to the web survey and 216 responses were received, constituting a response rate of 35%. We assessed potential non-response bias following Armstrong and Overton (1977). We compared the construct means from the first and last 25 percent of respondents and found no statistically significant differences, suggesting nonresponse bias did not significantly affect the results. Regarding respondent information, the average VAR had annual sales of \$6.7 million, 39 employees and a relatively long relationship, 9.2 years, with its focal manufacturer (the length of relationship indicates a stronger probability of a well-developed social bond). Finally, the manufacturer represented 36% of the reseller’s annual revenue.

5.2 Measure assessment and interaction term calculation

All analysis was conducted using LISREL 8.54 unless otherwise noted. First, the measurement model was estimated in a multi-step strategy. Then, a confirmatory factor analysis (CFA) was employed to assess validity and reliability. After minimal respecification, the model exhibited a good fit to the data (see Table 1). Next, for a rigorous test of potential bias due to common methods we followed procedures outlined in Podsakoff, et al. (2003). First, we conducted the Harmon Single Factor test by specifying a CFA model in which all items loaded on a single factor. As can be seen in Table 1, the single factor model had extremely poor fit. Second, we specified a common method variance (CMV) factor, which loads on all items in addition to the latent constructs of theoretical interest (Podsakoff, et al. 2003). As indicated in Table 2 only two correlations became insignificant, and one correlation became significant, when the CMV factor was added. Given these tests, we believe that common method bias is not a substantive problem.

Table 1: Model Fit Measures

Model	$\chi^2(df)$	RMSEA	AGFI	NNFI	CFI	IFI
Measurement	352.19(237)	0.047	0.85	0.98	0.98	0.98
Single Factor CMV	4034.05(252)	0.259	0.28	0.65	0.68	0.68
Added Factor CMV	746.79(248)	0.095	0.74	0.93	0.94	0.94
Restricted	435.53(282)	0.049	0.84	0.98	0.98	0.98
Unrestricted	409.84(276)	0.047	0.84	0.98	0.98	0.98

Table 2: Measurement Properties and Correlation Matrix

	Final Items	Const. Var. ^a	Meth. Var. ^b	Error Var. ^c	Atten. Rel. ^d	Atten. AVE ^d	1	2	3	4	5	6	7
1. Soc. Gov.	4	0.88	0.02	0.12	0.88	0.65		0.61*	-0.43*	0.39*	0.20*	0.16*	0.32*
2. Coord.	5	0.90	0.01	0.09	0.91	0.67	0.64*		-0.32*	0.48*	0.35*	0.30*	0.44*
3. Conflict	3	0.85	0.02	0.14	0.86	0.68	-0.39*	-0.26*		-0.23*	0.07	0.02	0.06
4. Adaptation.	4	0.79	0.04	0.17	0.83	0.55	0.45*	0.56*	-0.14		0.09	0.11	0.65*
5. DEI	4	0.94	0.01	0.06	0.94	0.79	0.24*	0.39*	0.09	0.16*		0.56*	0.23
6: SEI	4	0.86	0.02	0.12	0.88	0.65	0.22*	0.34*	0.04	0.18*	0.56*		0.27*
7. CMV	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

* Significant at 0.05 (two-tailed)

Above the diagonal are correlations when CMV is included, below when CMV is not.

Italicized are correlations which change in significance when CMV is included.

^a Construct variance is percentage of variance explained by the latent construct.

^b Method variance is percentage of variance explained by the common method factor.

^c Error variance is percentage of variance explained by error.

^d Attenuated for common method variance.

Note: AVE differs from construct variance as it does not account for covariance among scale items explained by the construct.

The added factor CMV model was also used to estimate attenuated reliability, attenuated average variance extracted (AVE), and variance decompositions (e.g. Carson, 2007), also reported in Table 2. All attenuated reliabilities exceed 0.8, while all attenuated AVEs exceed 0.5, indicating acceptable psychometric properties. The variance decompositions also show that trait variance exceeds either error or method variance in all cases. Discriminant validity was assessed via Fornell and Larcker (1981). As the lowest attenuated AVE is 0.55 and the highest squared inter-construct correlation is 0.41, criteria for discriminant validity are fulfilled.

Subsequent to the assessment of the measures, interaction terms were created using SPSS 12 following accepted guidelines (Ping, 1995), which are analogous to a traditional regression analysis incorporating multiplicative interaction terms. To create the interaction terms we followed a multi-step procedure identified in Cadogan, et al (2005). First, mean-centered single indicants of each of the multi-item scales were created. Second, estimates for the factor loadings, error variances, and factor variances were made by estimating a single-item CFA. To identify this model it is necessary to set error variances at $[(1-rel) \times var]$, where *rel* is the attenuated reliability of the original scale, and *var* the variance of the single indicant. Third, product terms were created by multiplying the single indicants for SEI and DEI by the single indicant for social governance. Fourth, estimates of the factor loadings, error variances, and factor variances returned by the single-indicant CFA were entered into equations provided by Ping (1995) to generate the necessary estimates of the error variances and factor loadings.

6. Analysis and results

To test the hypotheses, a nested modeling approach was used. First, a restricted model was estimated in which the γ parameters from each interaction term were fixed to zero, and all other parameters freely estimated. This restricted model is nested inside an unrestricted model, in which the γ parameters are freely estimated. As shown in Table 1, the unrestricted model results in a fit improvement of $\chi^2_{(6)} = 25.69, p < .05$. We also note that the squared multiple correlations of the outcome variables increased. Thus, we use the results from the unrestricted model to test our hypotheses. Table 3 provides the path loadings and *t*-values for all hypotheses, as well as the percentages of variance explained for the dependent variables.

In a linear interactive model, one can only interpret the beta coefficients of the independent variables as their individual effect on the dependent when the values of the other independent variables are zero (Kam and Franzese, 2007). Accordingly, the results of our direct hypothesis tests should be interpreted with this in mind. H1a receives support as hypothesized ($\gamma = 0.57, p < 0.05$), indicating social governance helps channel manufacturers and distributors coordinate task-related activities. H1b, which hypothesizes that social governance is associated with reduced levels of conflict between channel actors, also received support ($\gamma = -0.49, p < 0.05$). Regarding H1c, social governance is associated with greater levels of channel adaptation ($\gamma = 0.43, p < 0.05$), indicating social governance makes the dyadic partners better able to adjust to external changes.

H2a received support, demonstrating that increases in DEI are also associated with increased channel coordination ($\gamma = 0.19, p < 0.05$). Similarly H2b, which posited that higher levels of DEI were associated with higher levels of channel conflict, was supported ($\gamma = 0.20, p < 0.05$). However, H2c was not supported ($\gamma = 0.01$), suggesting that formally supplied demand-based information may be too rigid to allow flexibility and adaptation.

H3a, H3b, and H3c, which predicted null relationships between SEI and coordination, conflict, and adaptation all had non-significant path loadings ($\gamma = 0.11, \gamma = -0.04, \gamma = 0.07$ respectively). This supports our belief that supply-based information may not be within the shared managerial domains of channel partners, thus less relevant to channel decisions.

Table 3: Hypothesis Test Results

Relationship	t-value	Path Loading
<i>Direct Hypotheses</i>		
H1a: Social Governance → Coordination*	8.82**	.57
H1b: Social Governance → Conflict*	-6.36**	-.49
H1c: Social Governance → Adaptation*	5.78**	.43
H2a: DEI → Coordination*	2.80**	.19
H2b: DEI → Conflict*	2.43**	.20
H2c: DEI → Adaptation	.16	.01
H3a: SEI <i>is not related to</i> Coordination*	1.62	.11
H3b: SEI <i>is not related to</i> Conflict*	.43	-.04
H3c: SEI <i>is not related to</i> Adaptation*	0.85	.07
<i>Moderation Hypotheses</i>		
H4a: Social GovernanceXDEI → Coordination	.60	.04
H4b: Social GovernanceXDEI → Conflict*	-1.84*	-.14
H4c: Social GovernanceXDEI → Adaptation*	1.98**	.15
H5a: Social GovernanceXSEI → Coordination*	-2.22**	-.13
H5b: Social GovernanceXSEI → Conflict	-.48	-.04
H5c: Social GovernanceXSEI → Adaptation*	-3.39**	-.25

* = supported at 0.1 (two-tailed)

** = supported at 0.05 (two-tailed)

Reduced form squared multiple correlations: coordination = 0.494, conflict = 0.189, adaptation = 0.227.

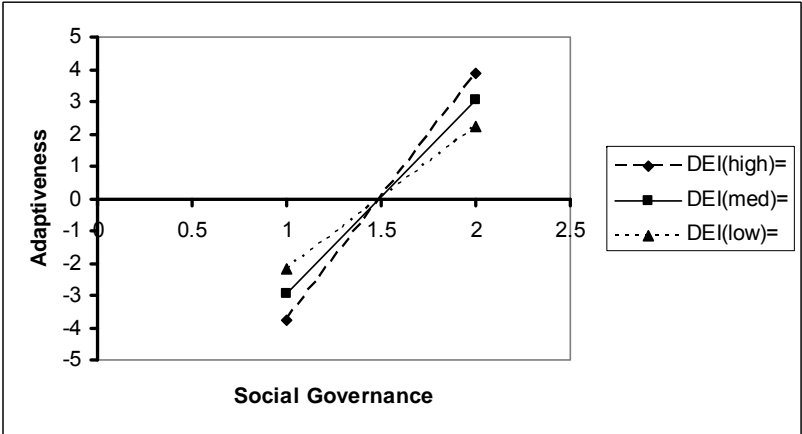
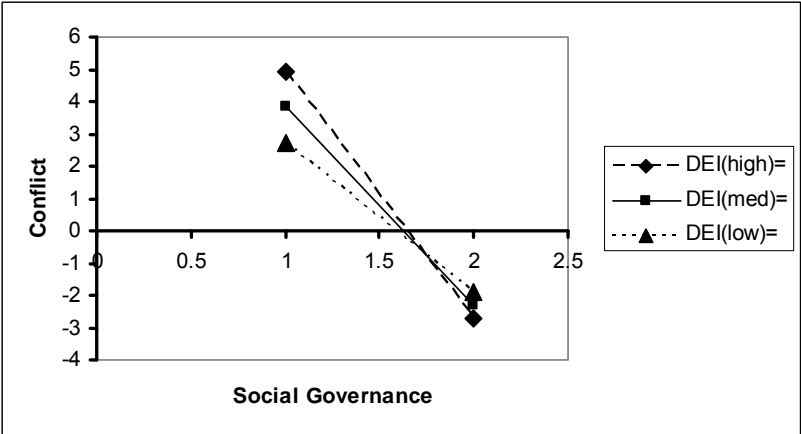
The pattern of support for the moderating effect of DEI activities suggests that they increase the benefits of a social enforcement approach. Specifically, although H4a was not supported ($\gamma = 0.04$), H4b and H4c did receive support. These hypotheses posited that at higher levels of DEI, the negative relationship between social governance and conflict (H4b: $\gamma = -0.14$, $p < 0.1$), and the positive relationship between social governance and adaptation (H4c: $\gamma = 0.15$, $p < 0.05$), both strengthen. This suggests that DEI helps channel alignment to benefit both parties. Figures 2A and 2B graphically illustrate the significant interactions. The illustrations are based on Aiken and West (1991) and Kam and Franzese (2007), who suggest that one can usefully interpret interactions using predicted values of the dependent variable for substantively meaningful values of the relevant independent variables. Thus, we used the mean plus or minus one standard deviation of the moderating variable.

Conversely, SEI activities appear to attenuate the benefits of social governance. Hypotheses which state that as SEI increases, the positive relationships between social governance and coordination (H5a: $\gamma = -0.13$, $p < 0.05$), and social governance and adaptation (H5c: $\gamma = -0.25$, $p < 0.05$) are weaker, are both supported, indicating that less-relevant and unilaterally-applied information may be harmful. These interactions are illustrated in Figures 2C and 2D. There was no support for H5b ($\gamma = -0.04$), implying that unilateral information may have no effect on the ability of social governance to reduce conflict.

Figure 2: Interactions

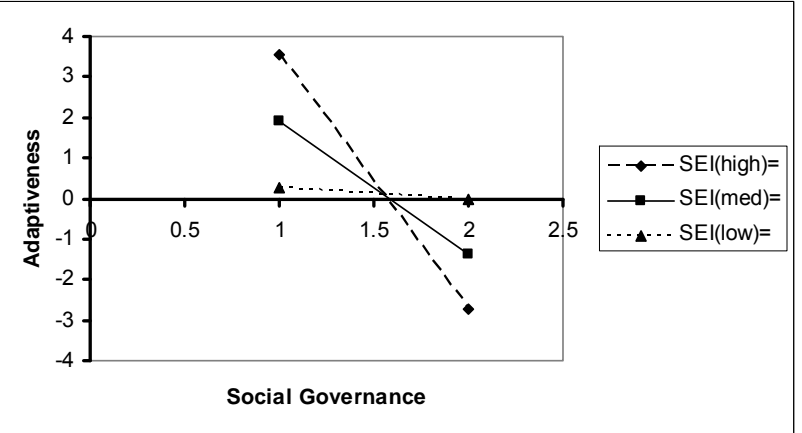
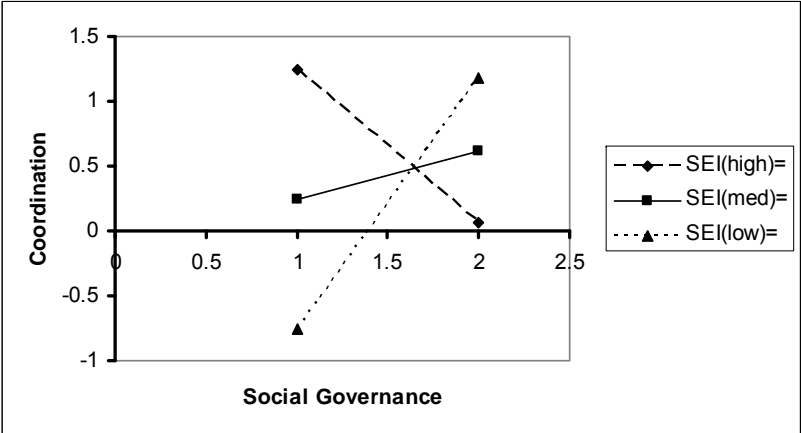
Panel A: Hypothesis H4b

Panel B: Hypothesis H4c



Panel C: Hypothesis H5a

Panel C: Hypothesis H5c



7. Discussion

7.1 Managerial implications

This study demonstrates that social relationships motivate coordination and the ability to respond to market challenges while at the same time reducing conflict. These are key determinants of channel performance, and should be sought. Building social relationships is difficult, however, and includes optimal selection of partners and/or a willingness to “trust first.” Although trusting and investing first exposes the manufacturer to risk, the results seem worthwhile.

Another managerial implication considers how information is exchanged in attempts to control the downstream channel. There is little question that the use of electronic business tools is increasingly popular, so we expect that more and more channel these tools may be the difference in high and low performing channel relationships. This study suggests two keys to optimal implementation.

First, managers should be aware that control-oriented information directed downstream in an electronic format has potential negative effects. Because unilateral information imposes constraints on resellers, it drives channel conflict. Although conflict isn’t necessarily negative, we suggest that efforts should be made to supplement electronic information with bilateral discussions and face-to-face meetings. This could potentially “soften the blow” of directed information. Second, it would benefit manufacturer managers, we believe, if they understand what information is required by the reseller. Thus study, for instance, found that supply information had a negative effect on the social relationship. Optimally, manufacturers and resellers might proactively plan the information to be included in the electronic information tools. Agreement on the information package may reduce the negative effects of control-based information on social relationship outcomes. We do not suggest that logistical information should necessarily not be included in these tools, nor that manufacturers should not under any circumstance provide control-specific information. However, the negative implications of such information should be considered.

7.2 Research implications

We believe this study has implications for measurement and theory. Regarding measurement, we conceptualized and operationalized two constructs that capture a unique type of information that will become more widespread and useful to the marketing literature. DEI and SEI capture both the content and governance nature of channel information. The measures have good reliability and seem to clearly represent different domains in information.

Conceptualizing DEI and SEI as we did allows us to study the effects of both information and hierarchical control. Information-as-governance has been studied for some time, but we add to the nomology of control by establishing information as a proxy for governance. This is demonstrated by DEI’s positive effect on conflict. Thus, as useful as DEI might be, it still motivates potentially negative outcomes. Further, despite the value of information to decision making, we hypothesize and find that there are potential negative effects depending on the extent of control implied within the information.

Finally, we continue to advance what is known about the important notion of fit in a relationship. A control theory phenomenon, fit describes how well the information provided by one party aligns with the tenor of the exchange. We find that information that fits the problem at hand strengthens existing relationships.

7.3 Limitations and considerations for future research

We hope that this study motivates additional research along these lines. Specifically, we consider generalizability, other forms of information, and other forms of electronic communication in suggesting a future research agenda.

A sample of VARs was chosen to ensure survey respondents were qualified to handle the electronic information topic. However, using a narrow sample exposes the study to questions of generalizability. For instance, it is possible that IT resellers are particularly savvy in understanding and using online information tools, thus they may not represent all users of electronic information. Since the data was collected, however, we believe that other industries have become more familiar with online

information exchange. Thus, we suggest that channel researchers consider multiple industry studies, or industry cross-sectional studies, as a way of contributing to the external validity of the findings.

Although we used many existing constructs in the survey, the two primary constructs, SEI and DEI, were developed from scratch. The limitations of new measures are clear, and although we followed a rigorous item development process we acknowledge that additional opportunities to validate the scales would be useful. For instance, a next step may be to develop measures at the specific software tool or brand level. Establishing validity in future research should be an ongoing goal for understanding how channels provide, access, and use electronic information.

The use of electronic information is rooted in general information usage. This study explored two issues along these lines that suggest additional research. First, the idea of information as a governance tool can be examined in a non-electronic setting. Channel researchers are interested in the intersection of unilateral and bilateral governance (Berthon, et al. 2003; Ness and Haugland, 2005), thus a particularly useful question might be: How do different forms of unilateral information affect bilateral relationships and conversely, how does bilateral information affect unilateral relationships?

Finally, as the use of electronic information grows, studies on the different forms of information appear useful. Clearly, the mode of delivery makes a difference. Thus studies of electronic delivery modes (i.e., online, electronic, blogs, etc.) will increase our overall knowledge of information's affect on performance.

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Item Appendix

Constructs and Items

Social Governance (Gilliland and Bello, 2002)

- We keep our promises to each other because we value our partnership.
- Our shared expectations serve to enforce our business agreements.
- The strength of our relationship will keep the parties honest in dealing with each other.
- Each party fulfils its responsibilities because the other party expects it.

Supply-Related Electronic Information (developed for this study)

We use E-Business tools provided by this manufacturer in...

- Logistical activities with this manufacturer.
- Order processing activities with this manufacturer.
- Physical distribution activities with this manufacturer.
- Supply management activities with this manufacturer.

Demand-Related Electronic Information (developed for this study)*

We use E-Business tools provided by this manufacturer in...

- Marketing activities with this manufacturer.
- Promotional activities with this manufacturer.
- Market development activities with this manufacturer.
- Advertising activities with this manufacturer.

Adaptation (Quinn and Rohrbaugh, 1983)

We are reasonably good at...

- Sensing market trends and frequently adjusting our selling practices for this manufacturer's products.
- Being innovative in our marketing of this manufacturer's products.
- Making an effort to meet competitive challenges to this manufacturer's products.
- Being responsive to unexpected sales fluctuations of this manufacturer's products.

Coordination (Cheng, 1983)

Concerning day-to-day activities...

- Our efforts are well-coordinated with the manufacturer's efforts.
- Our efforts are consistent with the manufacturer's efforts.
- Our efforts are organized effectively with the manufacturer's efforts.
- Our efforts are complimentary to the manufacturer's efforts.
- Activities between our firms are well timed.

Conflict (Fisher et al., 1996)

Regarding day-to-day activities...

- We have disagreements with this manufacturer in our working relationship.
- We frequently clash with the manufacturer on issues related to how we conduct business.
- We differ in opinions about overall manufacturer's strategies.

*Items preceded by "E-business tools are Internet-based software for performing business activities. Here, please tell us about your usage of such online software provided to your firm by this manufacturer."
