A THREE-STAGE IMPLEMENTATION MODEL FOR SUPPLY CHAIN COLLABORATION

by

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INTRODUCTION

Supply chain management (SCM) has been called the company’s ultimate core capability and the enabler of winning business models (Fine 1998; Lyons 2003). As part of a well-designed competitive strategy, SCM can drive profitability by boosting revenue growth through improved customer service and satisfaction (Hendricks and Singhal 2003) and propelling dramatic cost reductions (Hult et al. 2004; Lee 2004). Yet, many companies struggle to achieve these and other competitive benefits (Boddy et al. 1998). As stated in a recent supply chain (SC) forum: “Despite years of technological and process advancements, an agile, adaptive supply chain remains an elusive goal” (Beth et al. 2003, p. 64).

Serious barriers impede the collaboration needed to achieve the learning characteristic of an agile SC and its benefits. SC collaboration is defined here as the ability to work across organizational boundaries to build and manage unique value-added processes to better meet customer needs. SC collaboration involves the sharing of resources—information, people, and technology—among SC members to create synergies for competitive advantage. Collaboration goes beyond managing transactions for efficiency to managing relationships for creativity and continuous improvement. The collaborative goal is to work cooperatively together to devise and implement better approaches to solving problems and delivering the value customers expect. Collaborative SC relationships can be governed by informal understanding or written contracts. Trust is almost always a governing principle of winning collaborative SC relationships.

Many barriers to collaboration arise from the nature of inter-firm collaboration; others are deeply embedded in corporate cultures (Parker and Anderson 2002). Among the most prevalent barriers are inadequate information sharing, turf conflicts, and inconsistent metrics (Barratt 2004a; Moberg et al. 2003; Tyndall et al. 1998). These barriers inhibit both a company’s willingness and ability to collaborate in meaningful ways. The result: most companies struggle to implement initiatives that lead to real and effective collaboration with SC partners.
The question arises, “How can managers effectively overcome the cultural and structural impediments to SC collaboration?” (cf. Boddy et al. 2000) To help answer this question, we combine insights from organizational theory with findings from a series of in-depth company interviews to develop a process model that can guide managers as they strive to build the collaborative supply chain.

COLLABORATION DRIVERS AND RESISTORS: A THEORETICAL PERSPECTIVE

Two organizational theories offer insight into SC collaboration: 1) contingency theory, and 2) force field theory. Contingency theory has been used to better understand the dynamics of strategic alliances (Birkinshaw et al. 2002; Nasrallah et al. 2003; Walker 1997) and has more recently been applied to SC networks and collaboration (Guid et al. 2003; Johnson et al. 2002; Stonebraker and Afifi 2004; Wathe and Heide 2004). A contingency framework helps identify the forces driving and inhibiting SC collaboration. Force field theory helps define the interactions between these driving and inhibiting forces and their impact on SC collaboration (Lewin 1951).

A Contingency Approach to SC Collaboration

Contingency theory argues that managers must identify sequential, cause-and-effect relationships among environmental, management, and performance outcomes to “match internal features” with an uncertain and changing external environment (Luthans and Stewart 1977; Scott and Davis 2006). In a SC setting, this requires managers recognize changes in the competitive environment and then adaptively direct organizational and SC resources to improve performance (Fawcett and Magnan 2001; Stonebraker and Afifi 2004). For example, increased competition, shortened technology cycles, and heightened customer demands require companies to collaborate up and down the supply chain in order to increase asset returns (Togar and Ramaswami 2004). This contingent response toward collaboration is shifting the competitive focus from firms competing against firms for market presence and power to supply chains competing against supply chains (Boyaci and Gallego 2004; Corbett and Karmarker 2001).

Figure 1 shows a contingency framework for understanding SC collaboration. An appropriate contingent response helps firms improve performance in a dynamic environment through collaborative resource utilization across SC participants, which is enabled by better information sharing, proactive people development, appropriate performance measurement, SC rationalization, and trust-based SC relationships (Funk 1995; Hammer and Champy 1993; Lawrence and Lorsch 1967; Stonebraker and Afifi 2004). Two variables affect management’s ability to implement SC collaboration initiatives—environmental driving forces and internal resisting forces. Driving forces such as more demanding customers, greater competitor intensity, and shifting channel power dictate a change in management practice toward more collaboration. Resisting forces such as a lack of top management support, an unwillingness to share information, and turf conflicts inhibit change, dictating careful consideration of management’s contingent response. Managers must mitigate these resisting forces through the implementation of the right contingent strategic response. The diverse nature of the resisting forces requires the implementation of multiple initiatives to attain desired levels of collaboration and sought after performance outcomes. When the right strategic initiatives are implemented effectively, the firm can attain important performance outcomes such as superior quality and faster cycle times.

A Force Field Approach to SC Collaboration

Force field analysis helps SC managers understand the dynamics of change management so that they can better select and implement initiatives to overcome resisting forces (Lewin 1951). Force field analysis also recognizes that changes in the environment drive an organization to change its behavior. However, it also emphasizes the role of resisting forces, which inhibit change and freeze an organization in its current behavior. Driving and resisting forces can exist anywhere within an organization including people, policies, or processes, and can vary in strength and influence (Dent and Goldberg 1999; Kotter 1995). Force field analysis brings the interaction between the drive for change and the resistance to change into focus. Proper focus is critical since static companies in dynamic systems cannot remain competitive as rivals take advantage of driving forces to change, collaborate, and become more competitive (Fawcett and Magnan 2004; Friedman 2000; Grove 1996; Lee 2004).
Figure 2 illustrates Lewin’s three-phase force field model in relation to changing from a go-it-alone competitor to a SC collaborator. To increase collaboration among SC members, managers must comprehend the nature and strength of both the driving and resisting forces. When the forces resisting collaboration are equal to or stronger than the forces driving collaboration, a company is frozen in an equilibrium state and will not increase collaboration effectiveness. As summarized by Dent and Goldberg (1999), it is essential to unfreeze the organization before collaboration can increase. This unfreezing process is Phase I. Frequently some form of external disruption or significant emotional event such as loss of competitiveness or market share is required to unfreeze an organization and make change possible. Management resolve or the adoption of new strategic initiatives can at times unfreeze an organization. During Phase 2, called the movement phase, the driving and resisting forces collide, pushing the firm toward 1) a failed attempt to move from status quo practice, 2) a successful attempt to establish a collaborative SC culture, or 3) a move to a status not originally considered. It is during the movement phase that management must carefully implement its contingent response to cultivate an environment of change. Phase 3 refers to the tendency of companies to refreeze or settle into a new equilibrium state after a period of dramatic change.
Because SC collaboration is an oft discussed but poorly understood phenomenon, an exploratory research framework employing an extensive literature review and company interview methodology was employed (Bowersox et al. 1999). Contingency and force field theories make it clear that managing the change process is critical to SCM success. They place particular emphasis on identifying potential change motivators as well as the mechanisms that can sustain the transformation process. Therefore, two core questions guided the research:

1. What are the specific practices and requirements for successful SC collaboration?
2. How does a company develop an organizational culture that is capable of high levels of creative SC collaboration?

To begin to answer these questions, a comprehensive literature search going back almost 25 years was conducted. The search initially focused on articles in leading SC-related journals but was expanded to other journals and the trade press using key words in the EBSCO BSC and ABI/INFORM databases. Table 1 displays the most frequently identified practices and requirements for SC collaboration for the last ten years of the literature search. While the greatest emphasis is on collaborative planning techniques and information sharing, the variety of requirements listed reveals the challenging nature of SC collaboration. The literature review provided the insight needed to design a relevant and useful interview guide capable of exploring critical motivators, resistors, and transformation mechanisms. It also provided the context needed to analyze and interpret the interview findings in a meaningful way.

![Force Field Framework for Supply Chain Collaboration](image-url)
The interview process provides a rich context to help answer important what, why, and how questions (Meredith et al. 1989; McCutcheon and Meredith 1993; Yin 1981, p. 59). To help assure valid, SC-wide understanding, we conducted 51 in-depth interviews across four SC positions—retailers, finished-good assemblers, direct materials suppliers, and service providers (Pettigrew 1990). Companies were selected on the basis of their reputation for SC excellence; that is, they were best-practice presenters at professional conferences and frequently mentioned in the trade press. Once a company agreed to participate, a letter of introduction, a brief overview of the research objectives, and a copy of the interview protocol were provided. A semi-structured interview guide (see Appendix) was designed to assure comparability of findings while allowing for flexibility in pursuing insight into unique practices and programs that became evident during the interview (Spradley 1979). All but one interview was conducted on site at the company. The typical interview lasted 2-4 hours (the longest was 16 hours) and involved senior managers at the director or VP level who had responsibility for their company’s SC initiatives. Because of the cross-functional nature of SCM, the lead manager often invited other managers to participate in the interview process. For example, information technology managers, logisticians, new product managers, purchasers, and SCM project leaders were often involved in the interviews. This reflects the cross-functional nature of SCM. Descriptive statistics for the participant companies are shown in Table 2.
During each interview, extensive notes were made for later reflection. These notes were then translated into structured case write-ups to avoid “data asphyxiation” from the large amounts of data (Pettigrew, 1990). As the interview process continued, the researchers met to compare notes. These lengthy discussions were used to dissect the findings, perform a preliminary content analysis, and derive a consensus regarding their meaning. This discussion-based process led to an initial coding of the interview findings. However, a major concern at this stage of the content analysis was to avoid reaching premature conclusions from “information processing biases.” Therefore, after the interview process was concluded, a new researcher was brought in to independently analyze the interview summaries.

The new researcher employed Eisenhardt’s (1989a) approach for building theory through case studies. Each case was viewed as a “stand-alone entity” to help identify unique patterns and to form generalized theory in cross-case comparisons. The data were then analyzed from two distinct perspectives. First, individual write-ups were compared to the literature to identify and classify key collaboration practices/requirements. Second, the write-ups were analyzed by SC position to compare similarities and differences (Eisenhardt 1989b). This process led to a careful coding of the interview summaries. The Top 25 practices/requirements for effective SC collaboration were ranked by frequency (see Table 3). These results were then compared to those derived by the original research team. An iterative discussion process was then used to resolve discrepancies and classify the Top 25 requirements into seven collaboration categories that correspond with a generalized methodology for developing SC collaboration. This classification relied on the literature and the interview write-ups to contextualize why and how each practice/requirement is managed. The order in which the categories are listed in Table 3 reflects this process and the logic shared via the interviews.
### TABLE 3

**TOP TWENTY-FIVE PRACTICES AND REQUIREMENTS FOR SC COLLABORATION**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Management Commitment</th>
<th>Number of Firms</th>
<th>Percent of Total Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Garner chief executive commitment</strong></td>
<td>39</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td><strong>Make the rationale and need for change/collaboration visible—even palpable</strong></td>
<td>38</td>
<td>75%</td>
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<td></td>
<td><strong>Obtain senior functional management support</strong></td>
<td>33</td>
<td>65%</td>
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<tr>
<td></td>
<td><strong>SC Mapping and Role Definition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Establish common supply chain vision and objectives</strong></td>
<td>38</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td><strong>Define and document business principles, policies, and procedures and map back to value proposition</strong></td>
<td>30</td>
<td>59%</td>
</tr>
<tr>
<td></td>
<td><strong>Develop a holistic view via supply chain mapping—organization, process, and technology</strong></td>
<td>29</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td><strong>Identify and establish ownership of critical value-added processes and core competencies</strong></td>
<td>20</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td><strong>Define the specific role(s) of individual supply chain members and aggressively pursue role shifting</strong></td>
<td>20</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td><strong>Determine the supply chain’s value proposition</strong></td>
<td>16</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td><strong>Information Sharing and System Integration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Established information systems capable of sharing real time accurate &amp; relevant information (connectivity)</strong></td>
<td>44</td>
<td>86%</td>
</tr>
<tr>
<td></td>
<td><strong>Inculcate a willingness to share information across functions and between organizations</strong></td>
<td>35</td>
<td>69%</td>
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<tr>
<td></td>
<td><strong>Establish a revenue-tracking system</strong></td>
<td>20</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td><strong>Improve forecast accuracy throughout the entire supply chain</strong></td>
<td>19</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td><strong>People Management and Development</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Provide supply chain training throughout the organization/supply chain and then hold people accountable</strong></td>
<td>33</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td><strong>Develop mechanisms to share learning throughout the organization and the supply chain</strong></td>
<td>22</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td><strong>Establish cross-functional management and project teams and develop cross-experienced managers</strong></td>
<td>22</td>
<td>43%</td>
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<tr>
<td></td>
<td><strong>SC Performance Measurement</strong></td>
<td></td>
<td></td>
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<td></td>
<td><strong>Establish performance measures that lead to cooperation/collaboration and create visibility</strong></td>
<td>41</td>
<td>80%</td>
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<tr>
<td></td>
<td><strong>Design a proactive supplier scorecard-based rating system to drive continuous improvement</strong></td>
<td>17</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td><strong>Relationship Management and Trust Building</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Establish a high level of trust within the organization as well as with supply chain partners</strong></td>
<td>35</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td><strong>Find qualified product suppliers and service providers that are committed to continuous improvement</strong></td>
<td>28</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td><strong>Define the appropriate type of relationship to establish with specific supply chain members</strong></td>
<td>23</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td><strong>Establish a supplier development program via process improvement and product development teams</strong></td>
<td>18</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td><strong>Rationalization and Simplification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Identify and take advantage of commonalities and collaborative improvement opportunities</strong></td>
<td>29</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td><strong>Simplify the network—supply base, customer base, and service provider reduction</strong></td>
<td>27</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td><strong>Eliminate unnecessary or slow moving SKUs</strong></td>
<td>16</td>
<td>31%</td>
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THREE-STAGE PROCESS MODEL FOR SUPPLY CHAIN COLLABORATION

The interviews revealed that despite highly publicized success stories, true synergistic SC collaboration is rare. Creative collaboration requires managers close the cultural, emotional, physical, and strategic gaps that are an artifact of modern organizational design and promote turf protection. These gaps prevent synergistic collaborative behavior. Managers often lamented the challenges they encounter in trying to eliminate these gaps and the fact that no roadmap exists to guide collaboration efforts. This reality drove the effort to combine the interview findings with the literature to develop a process model for SC collaboration. Managerial frustration with failed or underperforming efforts to change business practices and take advantage of collaborative opportunities highlighted the role of force field analysis. Practices that could help managers to “unfreeze” and then “transform” a company’s culture and structure to support greater SC collaboration were identified and categorized according to their use by interview companies.

The three-stage process shown in Figure 3 organizes the interview and literature findings according to contingency and force field theories to provide insight into managing the collaboration change process. The three stages of the process are: 1) create commitment and SC understanding, 2) remove resisting forces to SC collaboration to change culture and practice, and 3) continuously improve collaboration capabilities. Figure 3 highlights the fact that the three stages span the boundaries suggested by force field theory. That is, the practices employed in each stage cross phases to promote the change that is needed to achieve higher levels of SC collaboration. Thus, the three stages are highly interdependent—the activities and outputs in the stages often overlap. The three-stage conceptualization helps managers understand that three very different sets of behaviors and skills are needed to enable winning SC collaboration:

1. Managers must consciously make the case for specific change,
2. They must navigate the difficult, dynamic, and potentially lengthy transformation process, and
3. They must promote a new “fluid” state that is responsive to a rapidly changing market.

FIGURE 3
THREE-STAGE SC COLLABORATION MODEL WITHIN A FORCE FIELD FRAMEWORK
Stage I: Create Commitment and SC Understanding

Recognizing that the world has evolved and that new rules govern competition motivates change. Managers identified the loss of market share, the emergence of a disruptive technology, and the advent of new competition as forces that triggered this recognition. Over two-thirds of the interview companies emphasized that the recognition of the need for change must be translated into managerial support for collaboration. Managers noted that this commitment must exist at the top, be widespread, and be made visible to people throughout the organization.

Managers viewed the creation of a visual image of a company’s most important role in the SC network as a critical prerequisite to building widespread support for SC collaboration. Mapping is a vital tool for creating buy-in beyond that of the SC champion. Specifically, mapping the “as-is” state of the supply chain is needed to help managers understand the company’s strengths and weaknesses and compare them to competitive realities. Mapping also reveals where the company and the supply chain may be “frozen” into uncompetitive behaviors and practices as well as where collaboration can improve performance. Pinpointing how and where counterproductive behaviors impede competitiveness is critical to communicating the need for change. Managers noted that the following types of questions help make sense of a SC map, motivate change, and guide the transformation process:

1. *What are the sets of satisfactions delivered to the ultimate customer?* Understanding what customers expect from the supply chain enables managers to identify the value-added roles that lead to success. It also makes gaps painfully obvious.

2. *What are the critical success factors for each SC level/player?* This knowledge helps managers to clearly define: 1) their company’s roles in the network, 2) how they can better meet customers’ needs, and 3) how they should evaluate and select potential collaboration partners and activities.

3. *Where are power and profitability located within the supply chain?* Channel power enables some SC members to achieve higher margins than other SC participants. To identify the source of power, managers must understand the influence of 1) critical technologies, 2) key processes, and 3) each player’s linkage to the end customer. When the sources of power are understood, managers can define desirable “should-be” roles of SC participants. Again, identifying and understanding the gaps between “as-is” and “should-be” roles is a powerful motivator for change.

At this point, managers understand the SC strategy, structure and culture. They know what value the supply chain must create and deliver. Gaps between existing and required capabilities and roles can be evaluated. The need for specific changes begins to crystallize, helping managers see both why and where they must focus efforts to “unfreeze” existing SC behavior. Mapping’s ability to make the need for change visible solidifies managerial commitment by helping managers agree on the specific activities that must be initiated to transform the organization. Mapping thus provides a roadmap for change. Establishing commitment and creating understanding are prerequisites to establishing the willingness and ability to collaborate effectively.

Stage II: Remove Resisting Forces to SC Collaboration

Stage II shifts the managerial emphasis to transforming organizational practice to support a culture of collaboration and is a natural extension of Stage I. That is, managers use the insight and commitment gained through the mapping process to undertake specific initiatives to remove the forces that impede collaboration. Managers typically discussed the following categories of requirements that must be implemented to remove resisting forces and transform a company’s culture.

1. Information Sharing and Systems Integration
2. People Management and Development
3. SC Performance Measurement
4. Rationalization and Simplification
5. Relationship Management and Trust Building

The interviews revealed that, for many companies, mitigating resisting forces depends on a strategy of momentum building. Managers repeatedly pointed to pilot projects that were implemented in one of the above
requirements areas. Pilot projects were typically selected to balance early successes and meaningful results. Baseline performance was carefully evaluated, the targeted practice was implemented, and performance improvements were documented. Properly communicated, performance improvements create visibility and justify further investments so that more challenging practices can be implemented. At a couple of companies, advisory boards played a key role in helping build consensus with SC partners regarding new programs. At a minimum, managers must cultivate one or two receptive SC partners who are willing to collaborate in pilot programs. One participant turns to the same trusted customer every time it wants to test a new program. By working cooperatively on a new forecasting system, impressive results were obtained—a 50 percent increase in sales was supported with a third less inventory. Such results made it easy to keep the transformation process moving forward both internally and with other customers. The need to build and sustain momentum must not be overlooked. Organizational inertia constantly works to refreeze the organization, especially in the early stages of change. Managers must therefore apply constant heat to keep the organization fluid and enable real transformation. Well-run pilot projects help do this.

While the interviews provided insight into the generalized process for mitigating resisting forces, they also emphasized the fact that this change process is seldom easy. Indeed, the interviews indicated that companies struggle to adopt collaborative SC practices because many policies and practices related to the above areas “freeze” the company’s culture and behavior. Some of the more common challenges encountered by the participant companies as they struggled to establish more collaborative cultures are discussed in the following paragraphs.

Information Sharing and Systems Integration. The single most mentioned requirement for SC collaboration was “better information systems.” Technological connectivity is an enabler in supply chains (Alkadi et al. 2003; Robinson et al. 2005), because it facilitates the sharing of ideas and allows for coordination of SC initiatives (Sanders and Premus 2002). However, when managers were asked to describe their information deficiencies and desires, they described a more complex issue than simple technological connectivity. Managers described an ideal world where decision-making information is frequently, honestly, and openly shared. This supports research that suggests people’s willingness to share information determines the effectiveness of technology systems (Spekman, Kamauff, and Myhr 1998). The interviews revealed that a major problem with current information capabilities is that people are not willing to share information they perceive to be sensitive. Managers resist sharing information that may diminish their decision-making control. Technological connectivity must be supported by policies and measures that promote a willingness to share relevant information in a timely manner. Few companies get both parts of the information integration equation right simultaneously.

People Management and Development. The interviews evidenced that managers often fear the vulnerability inherent in a collaborative culture. Although risk aversion is not a new concept in organizational change (e.g., Denrell and March 2001), the interviews revealed that managers are caught between wanting to attain the long-term benefits of collaboration and being vulnerable to counterproductive short-term measures and mindsets. They worry that if the company’s structure and culture do not change quickly enough to support collaborative behavior, as early collaborators, they will be punished by short-term, financially oriented performance measures. Numerous managers complained that while today’s environment demands greater collaboration, today’s financial climate inhibits it.

Managers viewed investments in training and team building as a sign of the company’s true commitment to SC collaboration and as an indication of whether it was “safe” to explore collaborative opportunities. Such investments keep the momentum for transformation alive and promote the behaviors that lead to real change over the long haul. Managers across all channel positions felt that SC education was needed throughout the organization. Senior executives need education regarding the potential return of various collaboration practices to more effectively establish priorities and allocate resources. Middle managers need an expanded vision of organizational processes to understand how they can contribute value to activities that take place outside their own domain. Ultimately, sustained investment in people’s skills and emotional safety is needed to overcome the resisting forces of inertia and risk aversion and establish a collaboration culture.

Supply Chain Performance Measurement. Manager comments suggest that measurement affects attitudes and behavior more pervasively than other managerially controlled variables. A common refrain was, “Our performance measures do not drive collaboration; they promote turf protection.” Managers were often impassioned as they talked about their companies’ measures. They were frustrated that existing measures tend to be very functionally, financially, and short-term oriented. Managers commented, “How can you show the immediate P&L impact of a long-term collaborative initiative?” While appropriate measures were the second most frequently discussed
requirement for effective SC collaboration, counterproductive measures were identified as the most entrenched resisting force to SC success.

Measurement’s role in sustaining organizational transformation cannot be overstated. Indeed, interviewed managers were fully cognizant that SC programs do not sell or sustain themselves. Measures that communicate the value of SC collaboration must be identified, refined, and implemented to document the competitive power of collaboration and justify the pain and expense created by change. Unfortunately, to date, no easy, silver-bullet measures have been identified. Therefore, a diligent and sustained effort must be made to develop measurement systems that promote appropriate behaviors and enable effective collaboration (Slone 2004).

Rationalization and Simplification. Interviewed managers insisted that a major hurdle they face in developing a collaborative supply chain is managing complexity. They noted that supply chains are naturally unwieldy, consisting of too many physical and information flows, too many SKUs, and too many relationships. An almost limitless number of decisions must be frequently made and constantly revisited. The result: managers spend so much time putting out fires and resolving crises that they do not have time to pursue more cooperative relationships or identify collaboration opportunities. As more than one manager related, “There just are not enough resources to do everything.”

Although the interview managers pointed out that a conscious effort must be made to simplify the network, they acknowledged that their rationalization (or supply chain simplification) efforts are often immature and progressing at a slower-than-desirable pace. The interviews revealed that much of the difficulty arises from the way companies pursue rationalization. Timing was a particular challenge. Specifically, until the analysis of Stage I is complete and the previous Stage II activities are well underway, managers are not likely to possess the time or insight needed to tame the challenges of SC complexity. They simply do not have the knowledge needed to tell necessary complexity from counterproductive complexity. As a result, they are not confident regarding where to begin, are overwhelmed by the magnitude of the task, and lack resources to proceed. In the end, they struggle to untangle what one manager described as the “web of complexity.” Managers decry the fact that their companies pursue rationalization blindly, making only marginal progress in using rationalization as a tool to promote cultural transformation and improved collaboration. Ultimately, when rationalization efforts begin too early in Stage II, rationalization often becomes the goal rather than the tool to achieve a more collaborative supply chain.

Relationship Management and Trust Building. The interviews emphasized the point that few companies possess the skills to effectively manage collaborative alliances. Many companies have been unable to “unfreeze” and “transform” traditional cultures and structures that are designed to manage arms-length, potentially adversarial relationships. This reality is reflected in the seventh most frequently cited requirement for SC collaboration success—the need to establish high levels of trust both within the company as well as with SC partners. When asked to identify the most important prerequisites to alliance success, trust was identified as the single most important relationship-building factor. Trust enables cultural transformation, making it possible to transform the nature and state of SC relationships. Trust assures alliance partners that power will not be abused (Malhotra and Murnighan 2002). Trust enables members of the SC team to rely on each other and thereby promotes collaboration, flexibility, risk taking, shared information, and shared resources. Yet, managers lamented that relatively low levels of trust typify SC relationships. When confronted with market demands for improved performance, companies resort to familiar practices that squeeze immediate performance improvements out of SC partners. As one manager noted, “The customer always has the upper hand.” Another observed that opportunism is common as he described a key customers approach to risk and reward sharing: “They keep all of the rewards and pass all of the risks to us.” Because opportunistic behavior is still widely evident in the following areas, navigating the uncertain relationship transformation process will be an arduous, enduring challenge:

1. Companies do not follow through on commitments
2. Potentially important, but sensitive information is often hoarded rather than shared
3. Leverage is the primary tool used to achieve price, and other negotiated, performance targets
4. Risks and rewards are seldom shared in a way to communicate that both partners are valued
5. Relatively few companies proactively make investments in partner’s skills and capabilities
6. Decisions are often made without explicitly considering their impact on a partner’s business
On the structural side of SC collaboration, some interview companies increase trust and “transform” traditional relationship patterns through the use of advisory councils. Three types of advisory councils were discussed: internal senior-level steering committees, supplier advisory councils, and customer advisory boards. While the roles and responsibilities of these councils vary, the goal is to get critical decision-makers involved in SC process and policy design decisions as early as possible. Advisory boards act as: 1) source of creative ideas and feedback, 2) an early warning system for flawed ideas, 3) a proving ground for favorable new initiatives, and 4) a source of support to help promote a new initiative to other chain members who are not on the advisory board. Over time, advisory boards can change how SC members perceive and work with each other—a critical step in “transformation” relationships. Well-managed SC advisory boards can provide a stream of opportunities to achieve the collaborative successes needed to establish high levels of trust and transition to more effective collaboration.

Stage III: Continuously Improve Collaboration Capability

Contingency theory describes companies as open systems affected by an ever-changing environment. Managers must therefore design SC networks to be dynamic and flexible. Otherwise, a supply chain that is highly competitive today may be obsolete tomorrow. Many managers acknowledged this fear, indicating that SC collaboration must become a never-ending process. Stage III of the SC process model addresses this reality, emphasizing the need to develop sensory and adaptation skills. Unfortunately, few of the interviewed companies truly felt their companies had arrived in Stage III. Rather, they find themselves in the midst of Stage II—the transformation journey. Thus, although many of the interviews discussed the importance of this future state of SCM, none of the practices discussed as critical Stage III activities made it into the Top 25 practices and requirements for SC collaboration identified in Table 3.

Nonetheless, the reality is that changing competition requires new competencies and potentially new SC team members. In this respect, our three-stage model requires a faster perspective than often associated with Lewin’s force field theory. Whereas Lewin proposes a refreezing of the organization, the interview managers argue that they cannot afford to refreeze and risk becoming complacent and obsolete. They recognize that today’s clock speed runs faster and the obsolescence curve is steeper than ever before. They therefore emphasize the need to build the unique skills and structures needed for continuous collaborative improvement. The goal is to stay relevant and remain a valued member of a winning supply chain. Thus, their new state is a “slushy” state of constant evaluation and improvement. The following practices were mentioned as important to positioning companies for success even as SC networks evolve:

1. Periodic environmental, technology, and industry scans
2. Best-practice and customer benchmarking
3. Collaborative improvement through suggestion programs, joint problem solving teams, and shared engineering and managerial resources

Stage III presents a delicate balancing act. New SC relationships must have time to gel so that experience can be turned into collaboration and competitive advantage. The disruption and uncertainty of Stage II must be followed by a period of relative stability where ideas and relationships are cultivated. However, even as companies harvest the fruits of a collaborative culture, every relationship and process must be open and examined for improvement and renewal opportunities. The underlying message of Stage III is that the chaos of transformation cannot be replaced with the complacency of business as usual. Ultimately, to get the most out of collaboration opportunities and assure continued competitiveness, companies must cycle through the formal stages of the SC process model.

CONCLUSION

The interviews highlighted two facts that SC managers must grasp. First, the rules of competition are changing, irrevocably raising the competitive bar. Getting over the raised bar will require higher levels of creativity and collaboration. Managers must therefore learn to collaborate more effectively. Managers at companies that are successfully implementing SCM strategies consistently reported that their performance improvement hinged on their ability to achieve high levels of SC collaboration.
Second, systemic cultural and structural changes are required to create more collaborative supply chains. Such changes are not easy to initiate or sustain. Managers must carefully identify the issues—philosophies, policies, practices, and procedures—that “freeze” the company’s culture and structure. They must then implement specific practices that can “unfreeze” and “transform” the company’s culture and practices in a way that promotes collaboration. The three-stage model presents key practices needed to “unfreeze,” “transform,” and continually improve a company’s collaborative capability. The critical difference in the three stages is in type of skill rather than duration of effort. The critical Stage I activities of generating commitment and understanding must continue through Stages II and III. Information, measurement, people, and relationship systems must also be constantly upgraded. Pursued periodically, the three-stage process model can help companies achieve leading-edge collaboration.

The interviews also exposed the fact that many companies struggle to achieve high levels of collaboration. Throughout the interviews, managers articulated that cultures change slowly, requiring managerial fortitude and vision. Indeed, if we were to add a 26th requirement for SC transformation, it would be “follow-through.” Too often, short cuts or technological solutions are sought instead of the more challenging cultural transformation. Missed goals and frustration are the most common result. Nonetheless, interviewed managers were optimistic that they are progressing down the path toward SC collaboration success.

Fortunately, the interviews suggested that the lack of collaboration is not a result of inadequate initiative, but rather a lack of maturity in managing the change process. As a result, resisting forces dominate and deter driving forces, stifling collaboration. Since our case studies revealed that managers spend a great deal of time persuading other managers, employees, and partnering firms of the necessity and benefit of SC collaboration, it might be beneficial for future research to consider the following:

1. At what organizational level(s) is employee buy-in the most critical to achieve SC collaboration?
2. What are the success factors that drive transformational SC pilot programs?
3. What new organizational forms—such as SC advisory councils—can help transform the way companies view and associate with one another in the effort to drive collaboration?

Some research has already begun to explore methods of persuasively presenting the case for SC collaboration (Munson, Jianli, and Rosenbault 2003). The three-stage SCM process model presented here provides a testable “prescription” (Bazerman 2005) for managers and organizational partners as they undertake the challenge of unfreezing, transforming, and continuously improving the collaborative capability of their SC processes and relationships.

NOTES

References marked with an asterisk denote the reference is cited in the literature review displayed in Table 1.


Appendix: Sample Interview Guide Questions

Do you see SCM as a passing management fad or as an important competitive strategy? Why?
What is your firm’s working definition of SCM?
As your firm began SC collaboration, what were the expected benefits?
What are the principal barriers that you have encountered in your SC collaboration efforts?
What have you done to overcome each of these major challenges?
What are the 3 or 4 most important requirements for successful SC collaboration?
How are the roles of different SC members determined and evaluated?
Have there been any specific efforts to shift roles and responsibilities to improve overall supply chain performance?

Collaboration with Suppliers: 1

How aggressively does your firm pursue collaboration with suppliers?

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Who has the major responsibility for supplier development beyond first-tier suppliers?
How do you work with 2nd-tier and lower-tier suppliers to help them achieve higher performance?
How does your firm communicate/share information with other SC members?
What are the 3/4 key measures of SC performance?
With what percent of 1st-tier SC members do you have a formal alliance?
What are the most important keys to alliance success?
How does your firm help suppliers improve their performance? 1st-tier? 2nd-tier? Service providers?
What are the primary responsibilities of service providers?
How have these responsibilities changed recently? i.e., what activities have you outsourced?

Summary:

What SC practices at your company would you consider to be world-class?
Do you have any SC anecdotes/stories that you would like to share?
Let’s take a minute to summarize key practices in each of the quadrants in the following areas.
• Employee Development
• Information Systems
• Performance Measurement
• Alliance Management

1 Parallel questions were asked regarding customer relationships.
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