Implications of organizational culture for supply chain disruption and restoration

Rachel A. Dowty [a,*], William A. Wallace [b]

[a] Department of Geography and Anthropology, Louisiana State University, 227 Howe-Russell-Kniffen, Geoscience Complex, Baton Rouge, LA 70803, USA
[b] Department of Decision Sciences and Engineering Systems, Rensselaer Polytechnic Institute, USA

A B S T R A C T

To manage supply chain disruptions, many diverse organizational cultures must work together to restore services and help ensure resiliency. We use a model of culture taken from social anthropology, economics and public management illustrated through two interorganizational cases of humanitarian supply chain disruption: the Federal Emergency Management Agency contracting with Universe Truck Lines to deliver ice after Hurricane Katrina, and the World Food Programme interacting with the Southern African Development Community to deliver maize after the floods of 2002. We illustrate ways in which a lack of understanding of cultural biases is one explanation for poor management of supply chain disruption and how this hypothesis can help direct future research.

© 2009 Elsevier B.V. All rights reserved.

1. Introduction

Supply chain partners must traverse an increasingly complex array of communication and coordination issues to maintain effective relationships with contracting, manufacturing, delivery, storage, and customer services. These issues become more obvious when organizations are faced with disruptions in their attempts to supply humanitarian aid after disasters. Efforts to better understand interactions among organizations generally rely on supply chain contracting models from behavioral economics that assume people act as self-interested, rational agents. An important reason cited for the failure of such models is that such an assumption discounts other ways of interacting and the existence of differing social and cultural preferences (Loch and Wu, 2008; McAfee et al., 2002; Boltanski and Thévenot, 2006; Mello and Stank, 2005).

Studies of organizational culture address how organizations go about enacting collective preferences to further organizational missions and goals. Everyday parlance generally employs the concept of organizational culture as 'a way of doing business.' In this sense its usage refers to how different organizations go about resolving tasks at hand in different ways. More generally, organizational sociologists think of culture as "shared understandings that, through subtle and complex expression, regulate social life in organizations." (Ouchi and Wilkins, 1985, p. 458).

Several studies have applied cultural models to study supply chain management (Mentzer et al., 2001; Gattorna, 2006; Ryu et al., 2006; de Koster and Shinohara, 2006; Roh et al., 2008; Naor et al., 2008). Mentzer et al. (2001) outline trust, commitment, cooperative norms, organizational compatibility, and top management support as five cultural elements of shared values among supply chain organizations (Mello and Stank, 2005). Gattorna (2006) identifies four "generic enterprise subcultures" for supply chain organizations: group, entrepreneurial, hierarchical, and rational. He describes the cultures that occur in-between these four types as being dominated by one of the four types while displaying elements of one of the other three subcultures, and uses these to propose a cultural mapping scheme to assess working relationships among supply chain partners.

Ryu et al. (2006) focus on a culture of collectivism in long-term orientation supply chain management in Korea. They argue that organizations functioning with a collectivist culture (such as many in Korea) have a better chance to successfully facilitate long-term relationships among supply chain partners than those functioning with a more individualistic culture that is characteristic of Western organizations. Their results are echoed by de Koster and Shinohara (2006) who compare Western European with Japanese supply chain partnerships. Their findings suggest that organizational cultures more focused on collective responsibility and consensual decision-making (such as in Japan) have slower evaluation and promotion processes but more reliable long-term supply chain relationships than those that emphasize individual decision making and responsibility (such as those in Western European countries).

Roh et al. (2008) review the importance of organizational culture in accounting for productivity gaps between US and Japanese companies. They show that a "high level of congruence

* Corresponding author. Tel.: +1 225 578 2685; fax: +1 225 578 4420.
E-mail addresses: rdowty1@lsu.edu, dowtyr@gmail.com (R.A. Dowty).

between organizational culture and strategic practices" is necessary for maintaining effective information flows (2008, p. 361). Naor et al., (2008) add manufacturing performance to the list of organizational attributes that depend upon cultural milieus. Their analysis of manufacturing plants across six countries indicates that organizational culture strongly influences infrastructure quality management practices and that "infrastructure quality management practices have a significant effect of manufacturing performance" (2008, p. 671).

With such broad implications for supply chain effectiveness, cultural dynamics that take place among organizations during supply chain disruptions deserve particular attention. Our approach emphasizes that an organization's culture is dynamic relative to the other organizations it interacts with to maintain effective supply chains during times of disruption. To compare organizational cultures as relative to those with which they interact at any given time, we use social anthropologist Mary Douglas' definition of a "cultural bias" as "a steady preference for one or another set of institutional forms and consequently a commitment to the kinds of knowledge that go with it." (1999, p. 411) According to Douglas' cultural typology, four cultural biases are defined in terms of two dimensions: GRID and GROUP. GRID refers to how rigidly rules and traditions influence decision-making and action-taking (e.g. application and use of rule structures), while GROUP refers to the tightness of interpersonal and professional ties seen through the frequency and transparency of communications and group solidarity (e.g. social solidarity groups). The four cultural biases defined through combinations of these two dimensions are thus HIGH GRID, HIGH GROUP ("hierarchist"), LOW GRID, LOW GROUP ("individualist"), HIGH GRID, LOW GROUP ("fatalist" or "isolationist"), and LOW GRID, HIGH GROUP ("egalitarian" or "communitarian"). These four cultural types echo other cultural typologies, preserving both traditional approaches to culture and improvements made by others, thus making them comparable to other typological findings.[1] Insofar as "boundary effects" (i.e., the condition of being in-between two cultural biases) exist, they tend to be fleeting during times of uncertainty and transitioning from one bias to another, and stabilize quite quickly into one or another cultural bias. (For a discussion of boundary effects and their implications, see Thompson et al., 1990.)

Cultural biases improve upon other cultural typologies by basing categories of organizational culture on mutually exclusive (words/actions cannot belong to more than one category), jointly exhaustive (words/actions always fit into one of the categories), and consistent criteria. For example, Hofstede (1980) used organizational attributes such as power, uncertainty, individualism/collectivism, masculinity/femininity, and long-term/short-term orientation to define culture. Although these categories serve well for many descriptive purposes, elements of an organization's culture may fit into both the "masculinity/femininity" category as well as the power category. Likewise, Deal and Kennedy's (1982) four types were the "tough-guy macho culture," the "work hard/play hard culture," the "bet your company culture," and the "process culture." Again, aspects of an organization's way of doing things are likely to fit into more than one of the terms used to define each separate culture. Douglas'

approach to cultural biases bases each of the four cultural types on the two dimensions of GRID and GROUP, which avoids this pitfall by each culture having only one combination of the two dimensions (e.g., mutual exclusivity). Another important aspect of cultural biases is that they all exist in any given organization at any time, but one tends to dominate the rest in different circumstances and interactions, such that all cultural biases are competing rationalities that organizational representatives use to make sense of the world.

These aspects of cultural biases become particularly important in questions of supply chain resiliency in the face of disruption. While an organization can be identified as enacting only one dominant cultural bias at a given time, all biases still exist within the organization, with representatives constantly gauging which form of decision making would best suit any given situation (Douglas, 1999a; Thompson et al., 1990). Furthermore, organizational representatives may use one cultural bias to make decisions in interactions with one organization, while they may adopt a different cultural bias to interact with another organization. This theory predicts that cultural compatibility is most likely to enhance interorganizational coordination and management when interacting organizations share the same cultural bias, but not when they share levels of only GRID or only GROUP.

For example, Loch and Wu (2008) conducted a study of how social preferences influence supply chain transactions. They found that self-interest and profit maximization models fail to predict decision making and proposed that classifying transaction preferences according to "relationship preference" or "status preference" better described their experimental findings. In the GRID-GROUP typology, preferences define the application of rule structures in getting things done (GRID) and the preferences for social solidarity among groups of organizational representatives (GROUP).

Gattorna (2006) fits social preferences for thoughts or actions into his proposed assessment for supply chain "leadership style," which in turn helps determine scores for two dimensions of an organization's (1) certainty/uncertainty in decision making and (2) competitive intensity. He proposes "focus" (the effort an organization exerts to improve its viability) and "control" (coordination and integration) as two dimensions for determining organizational culture in supply chain management. This provides a good example of how findings using the GRID–GROUP typology can also be applied and compared to findings made by using other typologies: the "control" dimension (coordination and integration) of Gattorna's resembles the GROUP dimension, while the argument could be made that "focus" could be compared to the GRID dimension (which refers to how rules provide organizational focus). However, as reviewed earlier, an important advantage of applying the GRIDGROUP typology is the mutually exclusive nature of GRID (rule structures) and GROUP (social solidarity and integration) as compared with "control" and "focus."

Our contribution to this literature is to develop and use cultural biases to characterize interactions among different organizations during humanitarian supply chain disruptions. Such disruptions are important to consider in studies of how to achieve adaptive, agile, and aligned supply chain management practices (Van Wassenhove, 2006). We identify social preferences in terms of organizational expectations and justifications for resource and risk management. We then use these to (1) determine the dominant cultural bias exhibited by each organization during a supply chain disruption, (2) identify advantages and disadvantages of nurturing different cultural biases in supply chain disruption management, and (3) discuss implications of these outcomes for interorganizational supply chain coordination and communication in humanitarian aid situations.

---

[1] Comparable typologies include but are not limited to Hofstede's five dimensions of culture (1980), Schein's third cognitive level of organizational culture (1985–2005), Handy's four cultural types (1985), Deal and Kennedy's typology using feedback and risk (1982), Dynes and Aguirre's typology using coordination by planning and feedback (1976), and Gattorna's (2006) cultural typology for supply chain partner relationships. Yet these models fail to base the typologies on mutually exclusive and jointly exhaustive categories, while all four cultural biases are based on two dimensions, GRID and GROUP.