DISTRIBUTED LEADERSHIP ACROSS THE BOUNDARIES OF A VIRTUAL ORGANIZATION[1]

Susan Gasson and Edwin M. Elrod
The iSchool at Drexel University, Philadelphia USA
email: sgasson@ischool.drexel.edu *and* emelrod@drexel.edu
Telephone: 215 895 6398 and 610 306 3391

ABSTRACT

This paper examines the leadership behaviors exhibited in a twelve-month field study of the e-Commerce systems group for a global service consultancy. We find that leadership involves a distributed management of meaning across functional and organizational boundaries. The extent to which leadership processes are distributed across group members increases with the span of inter-group coordination required. Distributed forms of leadership are required to both manage the social network necessary for global coordination and to acquire the polycontextual knowledge and expertise required to complete projects that span multiple business units and groups. We present a framework for how such groups manage distributed leadership in practice, with significant implications for the design of global management information systems.

Keywords: Leadership, Virtual Organizations, Boundary-Spanning Collaboration

INTRODUCTION

Information systems (IS) and workgroups that span organizational boundaries create special problems for management in virtual, global organizations. Multiple cultures, a reliance on technology-mediated communications, and diverse local goals add to the problems of geographically and temporally distributed management. A distributed organization exploits information and communication technologies (ICTs) – teleconferencing, email, databases, internet, and intranets – to span geographic boundaries and to communicate management decisions outward and downward. But a virtual organization goes beyond geography-spanning in their use of ICTs, to enable business processes that rely on technology for their inputs, operation, coordination, or delivery. Organizations increasingly rely on distributed human agency to provide the interpretive structures that support global management decision-making and leadership [2, 12]. Increasing virtuality in organizations appears to be associated with decreasing bureaucracy and decentralization of operational processes, with a selective centralization of some strategic management processes [12]. But little is known about why this should be so, or what mechanisms manifest leadership in such situations. Is the leadership of technology-mediated, geographically and functionally diverse groups different? As Zigurs observes, we have little evidence from studies of virtual, geographically-distributed teams in practice on which to base an understanding of virtual group leadership [14]. This paper presents findings from an twelve-month study of a global management team, responsible for the operation

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of e-Commerce network systems in a distributed service organization. We examine the different forms of leadership and decision-making collaboration exhibited over the period of the study. We relate various forms of collaboration behavior to specific boundary-spanning contingencies and organize these to understand the multiple modes of leadership that operate across distributed organizational network boundaries.

LEADERSHIP AS MANAGEMENT OF MEANING IN GLOBAL ORGANIZATIONS

Historically, successful leadership in group decision-making has alternately been ascribed to personal traits of the leader, to leader behaviors, and more recently to the relationship between leader traits, behaviors, and situational contingencies [7]. Leadership is viewed as the exercise of social interpretation, where a leader exerts influence through managing the meaning of external context and situations [6, 10]. More recently, it has been argued that a leader does not make decisions or interpret events in isolation. Leadership depends on the capabilities of groups to achieve a common goal through establishing collective interpretations of the situation [6]. Management meaning-making in dispersed and global organizations involves a *distributed* interpretation of the environment [4]. The theoretical construct of leadership as it relates to group decision-making has therefore evolved from an individual capacity to motivate others to an ability to display and elicit management behaviors that enable people to lead themselves [9]. "Collective meaning-making interprets experience such that a group's pursuit of its collective enterprise is in some way changed" [4, page 25]. While the traditional view of expertise is that it derives from a single domain of knowledge, boundary-spanners increasingly need to combine, translate, and negotiate knowledge from multiple domains to produce hybrid solutions [2]. Theories of distributed cognition argue that collaborating individuals from different groups can co-operate without having good models of each other, or the work performed by others. They can successfully work together while employing different units of analysis, methods of aggregating data, and different abstractions of data [11]. This is achieved through the allocation of strict functional roles, whose intersections are managed by the use of shared artifacts, such as checklists, forms, and formal work-procedures, that enforce the rules of collaboration without requiring understanding [8]. But at the enterprise level, managers must respond to a diversity of environmental problems. Effective leadership in boundary-spanning decision-making thus requires a diversity of interpretations, to ensure the requisite variety necessary for effective response [13]. Boundary-spanners must engage in polycontextuality, acquiring hybrid expertise through combining multiple, local frameworks for decision-making or action [5]. We have few studies of how such contextually-situated leadership takes place. We therefore adopt the social process framework of leadership proposed by Drath [3]:

(i) Setting direction involves clarifying goals and criteria for success and rewarding the accomplishment of various group members against these criteria. This mode focuses on the reduction of situational complexity, involving "the articulation of mission, vision, purpose, values; the naming of goals, outcomes, criteria of effectiveness; the devising of strategies, tactics, modes, methods".

(ii) Creating and maintaining commitment requires that the meaning of organizational events and situations become aligned and coordinated – i.e. they become shared constructs within the group. Leadership deriving from perceived expertise is no longer related solely to the

individual's claims to expertise within a single domain, but their perceived expertise in interactions with others in the group's wider social network.

(iii) Facing adaptive challenge recognizes that the goals of organizational processes are emergent and that groups needs to adapt dynamically as decision-making challenges evolve. "The group or organization must first create a shared sense of what it is and what it means before people can begin to create the resources for responding … Facing an adaptive challenge will therefore fundamentally change the community or organization" [3].

The next section discusses the research site and method by which leadership behaviors that conformed to one of these three process modes were examined.

RESEARCH SITE AND METHOD

The subject of this research was the global e-Commerce group at eServCorp Inc., which had been acquired by a multinational company only a few months prior to the start of this study. eServCorp operates a global e-Commerce organization that spans four major regions: North America, South America, the Asia Pacific region, and Europe. They deliver a diverse set of company products and services via the Internet. With an established base of major, multinational clients and the frequent addition of new accounts, the company needed to respond rapidly to changing customer needs. While the group used website applications to exchange project or product-specific information with clients, the primary mode of management coordination was a morning teleconference call, supplemented by emails in which schedules, plans, budgets, and documents were exchanged. eServCorp was a highly virtual company, at least on the operations side. While managers from the e-Commerce group were primarily located in the USA or Europe, operations, products, and services discussed in meetings spanned global offices and divisions.

TABLE 1. CORE TELECONFERENCE PARTICIPANTS

Pseudonym	Role	Based
EVP	e-Commerce Group Manager	US Headquarters
Mr Applications	Manager of applications development	US Headquarters
Ms Network	Manager of networks & infrastructure	US Headquarters
Mr Business	Manager in charge of client-facing projects	US Headquarters
Ms Europe	VP in charge of European projects	European head office
Mr Vendor-Mgr	Vendor, senior manager for N. American projects	Vendor data center
Mr EU-Support	eServCorp Inc., European client support	European head office
Ms Vendor-Tech	Vendor, manager for eServCorp app. development	Vendor data center
Mr Vendor-Data	Vendor, eServCorp data base mgt.	Vendor data center

The study followed e-Commerce group activities over a period of twelve months. Data were collected through an interpretive, ethnographic field study conducted via observations and interviews. Two researchers attended 187 management conference-call meetings, lasting from 15 minutes to one-and-a-half hours, with an average duration of 37 minutes. Most meetings included two or three managers in the global HQ office, with other managers attending by telephone from remote locations. Regular participants also included managers from VendorCo, a local company to which the majority of system development was outsourced. Occasional

participants included a diverse set of technical and marketing managers from this and other groups. Data analysis focused on the ways in which group processes were coordinated for different types of virtual collaboration. We employed computer-supported qualitative coding that was constantly discussed, compared, and evaluated between the authors. Meeting observation data was supplemented with regular management team interviews, with ad hoc participant interviews, and with email queries, to understand the significance of specific events or the role played by external groups and individuals. In the findings that follow, names of the organization, its departments, members, services, and products have all been anonymized.

FINDINGS

We found that the virtual team exhibited adaptive forms of leadership in response to varying degrees of emergence and diversity of interests inherent to a task or project. We identified three dimensions of leadership in collaborative group processes: (i) the geographic and functional distribution of the project or task, (ii) the degree to which the meaning and goals of a project or task was well-understood or constructed adaptively by group members, and (iii) the mechanisms by which leadership was exercised or shared across participants and other stakeholders. Our analysis revealed discernable mechanisms that occurred repeatedly in managing the meanings attributed to group projects and tasks.

Mode 1: Leadership For Local Coordination

Under conditions of local coordination, where members of the core group coordinated projects and tasks across geographical or functional-role boundaries, the leader needed only to coordinate decision-making criteria and knowledge across functional or disciplinary boundaries within the group Leadership in group decision-making was intended to achieve a strong and consistent group culture, providing unambiguous rules for action. The responsibility for managing this culture centered on the formal group leader (the eCommerce EVP). When responsibility for tasks and problems lay within the e-Commerce group, the EVP's leadership consisted of interpreting, translating and reframing group perspectives through a form of conceptual apprenticeship. Group members, who were experienced managers in their own right, were mentored by the eCommerce EVP by means of stories and analogies. The EVP encouraged team members to share even minor deviations from normal operations believing that he, or others in the group, might discern implications beyond those recognized by an individual. The EVP was thus able to draw on past experience to recognize situations and draw conclusions where others in the eCommerce team perceived uncertainty. The intention appeared to be the construction of a set of standardized rules and procedures for dealing with e-Commerce group systems, members, and problem situations so that group members acts consistently and in anticipation of problems that they had not personally experienced. The EVP thus *interpreted* the external business environment and the internal organizational environment, to derive rules for action for the group. His stories provided a set of "contextual patterns", by which group members could identify how to act or decide in novel situations. They were thus sensitized in advance to how to handle situations that were new to them. He engaged in *community building*, through processes aimed at establishing a strong sense of group identity, so that group members acted in concert. He acted as a *group facilitator for new knowledge and expertise*, eliciting information about novel situations from other group managers and framing this in such a way as to make this knowledge meaningful to other managers who had not shared the experience. This knowledge was debated,

and then reframed by the group manager, to provide a set of rules for group decision-making ("this is how we do things here").

Mode 2: Leadership For Conjoint Agency

In conjoint agency, when the eCommerce group collaborated with other groups in projects that they controlled, leadership in group decision-making was focused on clarifying group knowledge, the required scope of action, and maintaining commitment to collective goals. Leadership processes were distributed across the group leader and key group members. The group leader's responsibility appeared to lie in *defining the boundaries for action*, both conceptually in terms of scope and rules for action at the boundary with other groups, and effectively, in terms of defining the social network of contacts for collaboration. *Knowledge-leadership was delegated*, for each major initiative with external interfaces. One of the group managers was expected to become a domain expert in relevant processes and to act as the interface to external groups. For example, Mr. Applications was delegated to become an expert on the impact of the Sarbanes Oxley (corporate accountability) legislation. As the implications of the legislation became clear, Mr. Applications also become the group interface with the external firm of auditors employed by eServCorp to determine the management controls that needed to be in place. He met with the VPs and Directors from other groups in eServCorp to agree how the systems changes would impact their operations. All of these activities were reported back to the group and changes to group processes debated across all relevant managers, to define a collective response to the legislation. *A collective response was defined by the group*, then reframed by the group leader (the eCommerce EVP), so that this was formalized in terms of future rules for action in each relevant knowledge domain. All the group managers used exactly the same terms to describe the required course of action in response to Sarbanes Oxley system controls, even though only one of their number had been engaged in defining these responses.

Mode 3: Leadership For Distributed Collaboration

In distributed collaboration, where project goals, rationale, and management responsibilities were negotiated across multiple organizational interest-groups, leadership was also distributed across a wide and dynamic set of key domain experts. The group leader appeared responsible for *social and political network definition*. He initiated and facilitated social contacts with other groups, and actively managed both internal and external expectations of collaboration at the boundary between groups. Individual group managers *created external networks of influence*, by adaptively managing and influencing the selection of relevant areas of expertise. They volunteered to act as knowledge domain-experts, gathering information on key external processes and identifying influential contacts in external groups whom they judged to have an appropriate perspective to further group interests. They adaptively framed a wider organizational knowledge-base, influencing know-why through the selection of contacts on the basis of who-knows-what. Group identify appeared to be redefined improvisationally through the set of evolving strategies adopted by the group domain experts and debated among group members, as they *collectively redefined the group role and purpose* in the organization. For example, in defining the global data privacy policy, eServCorp leveraged experience with a diverse set of Canadian and European regulatory bodies, which had the most stringent data privacy regulations. This required setting up a global taskforce to determine appropriate management controls and procedures for data privacy. Delegated individuals periodically

reported back while others drew on their expertise and position to adopt emerging external interface roles. Other eCommerce group managers found themselves in meetings with privacy experts from the parent company and influenced the parent company's policy in this area. So leadership in group adaptation was distributed, as multiple group domain experts created and maintained a "web" of internal (group) and external experts, who advised the group and acted as conduits to other influential managers and decision-makers.

DISCUSSION

In examining the forms of group leadership exerted in enterprise-level decision-making in a virtual organization, we discerned three modes of leadership that depended upon the span of inter-group coordination required. We related these three modes to the different mechanisms in which leadership was exerted for each of Drath's [3] social leadership processes and to the span of organizational coordination. Table 2 provides a framework for how leadership is managed in practice, across three spans of coordination in decision-making

TABLE 2. LEADERSHIP IN BOUNDARY-SPANNING DECISION-MAKING

Coordination Scope <u>Leadership Process</u>	***Local Coordination*** **(Core group, internal knowledge boundaries)**	***Conjoint Agency*** **(Core group acting as Hub to external groups)**	***Distributed Collaboration*** **(Core group part of Web of coordinating groups)**
<u>Setting Direction:</u> understand and interpret complex situations to reduce complexity and to generate solutions	*Situation interpretation:* Leader's role is to interpret situations through stories of prior decisions and their consequences. Creates set of "contextual patterns" for decision-making.	*Boundary management:* Leader manages scope of change, providing examples of previous collaborations to create *inter-group* contextual patterns, that clarify decision-making & coordination rules.	*Social network definition*: Leader negotiates group responsibilities and clarifies group role in org'l. decision-making, delegating people to become domain-experts in *external* contextual patterns.
<u>Creating & Maintaining Commitment:</u> align/coordinate perspectives on ambiguous situation, to create implementation framework	*Building community:* Leader manages group identity, to build sense of belonging and rules for group decision-making, communicated through stories of "us vs. them". Manages commitment through creating group language & metaphors.	*Delegated knowledge-leadership:* Leader delegates knowledge-domain experts, to represent group perspectives in external interactions. Leader manages evolving group identity through clarifying strategy and goals by defining forms and procedures for collaboration.	*Creating external networks of influence:* Leader identifies external contacts, negotiates political influence and group role in implementing decisions. Group domain-experts negotiate problem-definitions & inter-group collaboration procedures, forms, and responsibilities.
<u>Facing Adaptive Challenge:</u> communicate and enact a positive interpretation of situation, motivating and directing others.	*Facilitating collective expertise:* Leader formalizes knowledge of what worked in previous situations. Knowledge of how to investigate novel problems maintained through standardized forms and procedures.	*Defining collective response:* Domain-experts collectively assemble their knowledge of how external groups operate. Domain experts bring back ext'l. knowledge & expertise, which leader formulates as decision-making criteria and allocation of responsibilities.	*Collectively define group role:* A "web" of group experts define collaboration tasks, acquire external knowledge, & identify key decision-makers. Leader uses influence to negotiate goals of change and clarify group role in global network of decision-makers.

The first leadership process, *Setting Direction*, focused on defining three forms of "contextual patterns" for decision-making, similar to the pattern languages proposed for situation identification and context-structuring in system design [1]. At the local level, where the leader needed only to coordinate decision-making criteria and knowledge across functional or

disciplinary boundaries within the group, leadership focused on situation interpretation in the form of stories and analogies that allowed group members to identify similar situations. At a conjoint agency level, where the leader needed to coordinate and control work performed by other groups, leadership consisted of defining the situation through stories that communicated how to manage the coordination of work between groups. At a distributed level, where the e-Commerce group did not have overall control over decision-making, leadership consisted of clarifying the group role and identifying domain-experts to acquire external knowledge.

The second type of leadership process, *Creating and Maintaining Commitment*, focused on defining formal organizational roles [8]. At the local level, functional differences in perspective were aligned through establishing a common language to resolve ambiguity through establishing a shared identity. For conjoint agency, leadership focused on defining standardized forms and procedures to formalize the criteria for decisions at group interfaces. In distributed collaboration, the group leader negotiated a group role in collaborative projects, while group-members acted as external domain-experts to negotiated forms and procedures for inter-group collaboration. So the role-definitions used to coordinate work became more fluid with increasing coordination-span.

The third type of leadership process, *Facing Adaptive Challenge*, focused on various aspects of managing polycontextuality [5]. At the local level, leadership focused on establishing standardized forms and procedures that defined how to *investigate* decision-making criteria (as distinct from the forms and procedures used to define criteria under *setting direction*). In conjoint agency, leadership consisted of group coordination responsibilities as group "domain-experts" acquired sufficient expertise to understand what needed to be done. In distributed collaboration, a web of group members debated key decisions and identified key organizational decision-makers, on the basis of knowledge and expertise acquired from other groups. These produced stories of heroic management decision-making that reinforced group identity, often in sharp contrast to the ineptitude of external groups. The group leader's role was to cultivate the group role with his social network of influential, senior decision-makers.

From this framework, we would argue that leadership processes tend to focus on the "traditional" aspects of leadership only at a local coordination level. Distributed leadership is required to both manage the social network necessary for global coordination and to assemble the polycontextual knowledge and expertise [5] that is required to complete projects that span multiple business units and groups. Our findings indicate a distributed set of situation interpretations and understandings that are divided among group members [4, 11], rather than the shared group understandings that are traditionally ascribed to individual leadership [10]. This is in stark contrast to the traditional role of the leader as directing shared purpose and goal achievement [7].

CONCLUSIONS

The contribution of this paper is to suggest a framework (presented in Table 2) for how distributed, global, and virtual groups manage leadership tasks in practice. The findings demonstrate the significance of roles in coordinating distributed cognition, but not in the sense of the formalized, functional work roles as described by Hutchins [8]. Instead, knowledge-domain-expert roles permit a group to improvise goals and strategies based on an evolving but collectively held core identity. The three modes of leadership suggested by Drath [3] contribute to this identity in different ways, particularly at the local span of coordination. The cohesive identity achieved allows group members to make decisions semi-autonomously in the context of

more distributed spans of coordination. The group identity creates a set of conceptual "patterns" [1] for action, that permit group members to identify the structure of similar situations and problems and so to understand how to act. These provide a decision-making repository that is drawn upon in interactions with other groups and dynamically adapted by various domain experts engaging in wider organizational interactions. Facing adaptive challenge is the most significant part of group leadership, as it requires the group to determine new responses to novel situations and often to redefine its identity [3]. No one person can experience such a distributed set of objectives in their entirety, nor manage them across a diverse set of interest groups. As domain experts devise new improvisational strategies in their dealings with other groups, these are brought back to the group and debated, creating a new set of meanings and conceptual patterns for the group.

The findings have significant implications for the design of global management and decision-support systems. The majority of decision-making and coordination procedures rely on interpersonal communication and maintaining a web of social network contacts. While systems might aid in recording who-knows-what and who-is-responsible-for-what, this information is constantly evolving. Much of the information required for group decision-making is political and so unlikely to be committed to a formal information system. Such modes of collaboration are best supported by non-persistent channels of communication (voice and email), rather than the more persistent forms of information storage provided by decision-support and management information systems. Much of the research into media richness and knowledge transfer relates to the form of interface and technology-mediated interactions, rather than to the forms of knowledge being transferred and the types of social interaction required. We would suggest that many of the leadership behaviors observed here are not currently recognized as distributed and so management coordination systems enforce a focus on distributing information to communicate decisions, rather than on providing support for multi-way decision-making.

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