Ambassadorial Leadership
A Pilot Study of a Model for Leading Virtual Teams

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Abstract. Existing models of leadership have been built on the assumption of face-to-face interaction, cultural homogeneity, and hierarchical organizational structures. We introduce a new model, Ambassadorial Leadership, which recognizes that different behaviors are needed for leading globally distributed virtual teams. The behaviors include those that are characteristic of an Ambassador who must be culturally sensitive, able to span boundaries created by geography and functional background, and able to help build a collective identity for the virtual team. We conducted a pilot study to examine the model and to compare our model to the transformational leadership factors. The results showed good discriminant and convergent validity as well as some indication that the new model adds some complementary dimensions to the transformational leadership model.

1   Introduction

Virtual teams have three basic characteristics: members are geographically, organizationally, or personally dispersed; collaboration and communication occur through the use of information technologies; and interactions are more likely to be temporally displaced or asynchronous [1, 2].

Although early scholarship tended to treat virtuality as a dichotomous concept [3] more recent research [4] has recognized that virtuality is a continuum. In fact, Arnison and Miller [5] believe there is no distinction between a virtual and traditional team, in that both utilize the same technology and communications. Finally, Fiol and Edward [6] presents the traditional vs. virtual argument as a continuum with two endpoints, the traditional and virtual teams. These end points are

linked by hybrid teams that may exist at any point along the continuum. Along this continuum, the traditional teams would meet most frequently face-to-face (FTF); while virtual teams would rarely if ever meet FTF, and would depend predominantly on technically mediated interaction [2, 7].

Whether the team is collocated, global, or completely virtual, a predominance of technically mediated communications and collaboration presents new challenges to the team leader. Challenges such as building trust, motivating team members, bridging cultural diversity, and clarifying team goals are far greater and yet remain foremost the leader's responsibility [8]. Collaboration, whether it is FTF or computer mediated, occurs within a much broader context or climate, which includes interpersonal, social, organizational and technical factors, all of which have important implications for the attitudes and behavior of team members and their ability to succeed and innovate [9].

2   Virtual Teams and Virtual Distance

In addition to those items that are most frequently identified as the defining elements of virtual teams: geographic distribution, temporal dispersion, and technology driven communication [1, 2, 10], there are a number of other characteristics that may occur to varying degrees within a virtual team. These additional attributes contribute to the overall environment of the virtual team and must be considered by the virtual team in developing an overall strategy that will ensure the team's effectiveness and success. Some of the more frequently occurring attributes include: relational histories, cultural factors, infrastructure, isolation, identification, task interdependence; team size, FTF interaction, multi-tasking, and level of technical skills. As stated previously, these attributes may be present in varying degrees. Even if these elements are only minimally present, their combined effect can have a significant impact on team performance [4].

2.1   Identification and Faultlines

Virtual teams typically have a diverse membership determined by demographic characteristics, cultural background, skills, interests, etc. Lau and Murnighan [11] coined the term "faultlines" to describe characteristics that determine these sub-divisions. Faultlines can be determined by a single or multiple characteristics. Multiple characteristics that are aligned will produce stronger faultlines with a greater level of homogeneity within the sub-group.

Individual members of the virtual team frequently experience uncertainty and role ambiguity at the team's inception [6]. While these experiences are not unique to virtual teams, the traditional relief of a local supportive infrastructure may or may not exist. As a reaction to these stressors, the individual member will seek to join with other members who have similar attributes, interests, skills, demographic characteristics, etc. These sub-groups will form along the faultlines determined by those characteristics. With the formation of these groups, the members attain an

immediate sense of identification and initial relief from some of the uncertainty and role ambiguity that existed [6]. This identification with sub-groups is attributable to social identity theory [12, p. 3].

The challenge in a virtual team is to develop a new allegiance to the comprehensive team and subsequently instill in the member an identity with this collective unit. This new identity may co-exist, complement, or challenge that of the sub-unit. When identity within the virtual team challenges the identity of the sub-unit, it can be detrimental to the effectiveness of the virtual team. This situation may arise from a number of factors; one possibility may be a strong and effective actor in the leadership position of a sub-unit. The emergence of a new leader for the collective virtual team may be viewed as a challenge to the sub-unit leader. This challenge could threaten the member's self-identity and create a conflict between membership in both the sub-unit and collective team. This situation may be further complicated if other sub-units also have a strong and effective leader that becomes evident with the forming of the virtual team.

How does the assigned team leader overcome this real challenge not only to authority, but also to the very real mission of the team? How does the leader maintain neutrality between the sub-units while demonstrating a strong commitment to the objectives of the team?

3   Leadership and Virtual Teams

The primary objective of our research is to examine a new approach to leading virtual teams. Research on leadership has a long history but the existing models are based on the assumption that interaction is mostly face-to-face and that organization structures are traditionally hierarchical. As we move toward virtual teams with globally distributed, culturally diverse subgroups, the relevance and efficacy of existing leadership models needs to be examined. Our objective in this pilot study was to test a set of items designed to measure factors that we hypothesized would influence the performance of virtual teams. We call our model Ambassadorial Leadership because we believe that networked, culturally diverse teams demand skills that are akin to those of an Ambassador. An individual who is culturally sensitive, can bridge organizational and cultural divides and act as a facilitator and mediator when conflict or misunderstanding arises because of differences in functional, geographic or cultural backgrounds.

3.1   Full Range Leadership Theory

The single most influential leadership theory in current academic research is transformational leadership [13]. In fact this theory combined with that of transactional leadership and laissez-faire has been called the Full-Range Leadership Theory (FRLT) in recognition of its broad acceptance and support based on empirical findings [14, 15]. Its popularity has far exceeded any of the other theories that have been spawned since Weber introduced the concept of the charismatic

leader in the early part of the twentieth century [16]. Although transformational leadership is not the first of the neo-charismatic theories [17], its contributions to leadership research dictate a prominent role in any discussion.

Transformational leadership includes four types of behavior: idealized influence, individualized consideration, inspirational motivation, and intellectual stimulation [10]. Each of these four behaviors can affect the team members and subsequently the performance of the team itself.

Transactional leadership is composed of three behaviors: contingent reward, active management by exception, and passive management by exception [10]. Laissez-faire completes this theory by allowing for the absence of leadership.

Although transformational leadership has been widely accepted as a valid and useful theory, Yukl [18] offered some criticisms of the FLRT. First, he notes that, "Some important transformational behaviors are missing in the Bass [19] version of the theory and in the MLQ, which was designed to test the theory" [20]. Among the missing behaviors that Yukl identifies are those related to empowering such as consulting, delegating, and sharing sensitive information, all of which relate to the notion of shared leadership. He also notes group level behaviors including facilitating mutual trust and cooperation, building group identification, and collective efficacy. Finally, he notes that the model does not include behaviors that involve leader interaction with superiors, peers, and outsiders whose information, cooperation and political support are essential for a group's performance of its mission (for example, networking, acting as spokesperson for the group, negotiating agreements, persuading people to provide political support and necessary resources, resolving problems and conflicts with outsiders). Yukl also makes the argument that there has been insufficient specification of situational variables and their moderating effects on the effectiveness of FRLT. In particular he notes that organic structures and situations where boundary-spanning units supersede the technical core have not been studied sufficiently. Many virtual teams, and especially globally distributed virtual teams would appear to have precisely these characteristics: networked structures and boundary-spanning with respect to functionality and location.

3.2   Ambassadorial Leadership

Virtual teams, especially those that are geographically distributed and culturally diverse, require a rethinking of traditional leadership models. We hypothesized that four factors would complement the full range leadership model. These include, Internal Boundary Spanning, External Boundary Spanning, Shared Leadership, and Advocacy. Each of these factors should act to decrease the emotional and psychological distance between team members and subgroups and have positive effects on trust and team performance.

3.2.1   Internal Boundary Spanning
For a virtual team, internal boundary spanning is defined by the activities that bridge the geographically, culturally, functionally diverse team members. The needs

that drive the interdependence between team members dictate the level of boundary spanning that must occur. A team that is highly differentiated often has a greater need to exchange information than a less differentiated team [21, 22]. This internal spanning may be of greater importance than external relationships depending on the tasks that are assigned to the team [21, 22]. As the team engages in collaborative effort, the members perceive it to be more effective and there is a positive effect on team cohesion [23, 24]. Vinokur-Kaplan [25] found a correlation (p < 0.01) between both team cohesion and interdisciplinary collaboration with team effectiveness. Seers, Petty, and Cashman [26] investigated team-member exchange and found that teams with a higher level of communication and collaboration were more efficient. They defined team-member exchange as the reciprocity between a member and his or her team.

Internal boundary spanning does not only exist in the one to many construct of the team-member exchange. It may also exist between sub-units within the team. These sub-units may result from faultlines that develop from different cultural, socio-economic, geographic, functional, or other differences between the team members [6, 11, 27-29].

3.2.2   External Boundary Spanning

Teams, whether traditional face-to-face or virtual do not exist in a vacuum. Their existence is associated with external sources, Sundstrom, Demeuse, and Futrell [21] state that it is necessary not only to consider the internal processes, but that effectiveness may hinge on the inherent relationship between the team and those external sources.

External boundary spanning addresses issues that exist between the team and these outside sources. Ancona and Caldwell [30] have identified four activities that may be included: (1) protection and persuasion; (2) task coordination; (3) scouting; (4) guarding. Protection and persuasion involves securing support and resources from the outside sources. Task coordination pursues specific elements from the outside sources that are required to complete the team's task. Scouting is concerned with gathering information and monitoring the competitive environment. Guarding is a function of managing the boundary to ensure that critical information that would inhibit the team's effectiveness does not pass through.

Boundary management contributes to the overall success of the team [22]. Similar to Ancona and Caldwell's [30] guarding are the Gatekeeper and Representative roles [31]. The leader or team designate that serves as a gatekeeper filters the information that is coming into the team and acts as a buffer to external sources. Likewise, the team's representative monitors and controls the information that the team reveals to external sources [31, 32].

Social network theory and diffusion theory reinforce the need for external boundary spanning in their own way. The ties that exist between the team and external groups provide an avenue for diffusion of information between the two entities [33, 34]. There is a need for leadership that acts as a broker between the team and the external units and helps to develop relationships between these entities [18].

3.2.3   Shared Leadership

The literature on shared leadership is extensive. From Mary Parker Follet's concept of the law of the situation in the early part of the twentieth century [35, 36] through the emergence of the self managed work groups of today, shared leadership has been described in a myriad of ways—vertical leaders, emergent leaders, self-managed teams, empowered teams, distributed leadership, etc [10, 37, 38]. Yukl [10, 18] suggests that shared leadership must be researched further and current leadership theories should place a greater emphasis as a contributor to the theory.

Lipnack and Stamps [39] are unequivocal about shared leadership and virtual teams; they state simply that it is the norm. House [40] describes three forms of distributed leadership: delegated, co-leadership, and peer leadership. Delegation involves a division of the leadership roles based upon the situation and skill sets needed. Co-leadership recognizes to distinct leadership roles—task leadership and social leadership. The suggestion is that one individual cannot adequately perform both roles. Peer leadership evolves when the tasks involved can be simultaneously executed by multiple individuals who thus share the leadership.

Within the framework of this research, shared leadership is aligned primarily with House's [40] delegated model. The co-leadership form will likely exist in an informal arrangement as it is expected to be evident within the sub-groups that emerge as a result of faultlines. In the virtual team, shared leadership confers additional status and responsibility on selected team members in different geographic, functional or cultural units. Leaders may empower team members or they may emerge in response to situational demands. Although these shared leaders may engage in multiple leadership roles, the final responsibility remains with the team leader.

3.2.4   Advocacy

Advocacy is an extension of the behaviors that exist within boundary spanning. It includes activities such as spokesman, negotiator, buffer, arbitrator, and others [18, 41]. Advocacy, as with boundary spanning, can exist wholly within the team or across external boundaries. Within the team, advocacy refers to the leader or other team member actively promoting, pleading, or arguing in support of a sub-group or member's efforts. Externally, advocacy is designed to secure external support for the team and individual members. Recognition, as cited above, may be one of the methods employed by the team leader or members to advocate for another individual, group, or even themselves. Advocacy may serve to build an esprit de corps, and in so doing it will reduce virtual distance, which should increase trust between members. This factor also includes behaviors that the team leader can use to encourage contributions from the team and individual team members. It may be employed when dealing with any external group in a general way by reinforcing the team's contribution to the organization as a whole.

4   Method

4.1   Instrument Development

In addition to reviews of the literature a series of interviews and discussion with experts and individuals experienced in virtual team led to the development of a pilot instrument that included the following factors: (1) internal boundary spanning (5 items), (2) external boundary spanning (4 items), (3) shared leadership (2 items), and (4) advocacy (8 items). All items used a Likert-type 0-4 point scale. The pilot study also included the 45 items from the MLQ-5X instrument. These items were included in the pilot so that we could examine convergent and discriminant validity for the Ambassadorial Leadership Model and the FLRT. The data for the pilot test was secured using a web based survey instrument that retained the responses within a database that was maintained on the hosting server. The database was accessible at any time by the administrator and it downloaded automatically into an Excel spreadsheet.

The sample included responses from the authors' industrial and commercial contacts, as well as current and former students in a Management of Technology Master's program. There were 178 responses to the web survey. Of these responses 45 were from undergraduate students. As it is unlikely they had experience with work teams outside of academia, these data were eliminated leaving a total of 133. Two additional responses were discarded, as they were obviously unresponsive. This produced a usable sample of 131 data points.

4.2   Results

A first step was to assess the factor structure of the a priori Ambassadorial factors. We first performed a confirmatory factor analysis (CFA) with the four hypothesized factors. The fit was marginal with a RMSEA of .0945, AGFI = .735; CFI = .917. Based on a review of the modification indices we decided to perform an exploratory factor analysis (EFA) on the data. The results yielded five factors with eigenvalues greater than 1.0 that we rotated according to the varimax criterion. Our interpretation of the five factors was as shown in Table 1. As a result of the factor analysis we determined that a fifth factor, Recognition was necessary. Recognition is a behavior that reinforces the efforts put forth by the team members. Recognition has been shown to be an antecedent of Perceived Organizational Support (POS) [41]. Additionally, employees with higher POS expect that extended effort on their part will result in greater reward and recognition. This creates an alignment between the organization's goals and that of the employee [42]. Recognition may emerge from a number of sources: direct recognition by the team leader [18], recognition from other team members [26], or recognition from external sources [42]. Recognition from external sources may occur in part by promotional efforts (advocacy) of the leader or other members of the team.

Table 1. Ambassadorial Leadership Factors

Factor	# items	Sample item
Internal Boundary Spanning (IBS)	5 (.67)	*helps build trust among team members across locations.*
External Boundary Spanning (EBS)	4 (.67)	*obtains political support for the team's mission*
Shared Leadership (SL)	3 (.62)	*shares sensitive information with team members in different locations*
Recognition (RC)	5 (.91)	*publicly recognizes the efforts and accomplishments of individual members to the rest of the team*
Advocacy (AD)	2 (.49)	*promotes the importance of the team's goals to the organization's senior management*

Note: Alphas for the Ambassadorial scores are shown in parentheses.

Scores for each of the Ambassadorial items were computed by taking the mean score on the items assigned to each of the five factors. We then examined the discriminant and convergent validity of the Ambassadorial factors. Table 2 shows the correlations between the Ambassadorial scores and the Transformational Leadership scores.

Table 2. Correlations between Transformational and Ambassadorial Leadership Factors

	IBS	EBS	SL	AD	RC
IS	.47	.31	.39	.30	.47
IC	.43	.37	.38	.38	.41
IM	.44	.38	.42	.36	.49
IB	.31	.28	.24	.20	.33

The average correlation between the Ambassadorial and Transformational factors was .37, in contrast to the within transformational average correlation of .65 and the within Ambassadorial correlation of .44.

We examined the regression of the outcome variables on the ambassadorial factors. The MLQ includes nine items measuring the influence of the leader on effectiveness, satisfaction and effort. A factor analysis revealed one large factor for these nine items accounting for 75% of the variance so we calculated an outcome score based on the average of the nine items. We then conducted a multiple regression analysis of the outcome variable on the five ambassadorial factors (see Table 3).

Table 3. Results of Regression of Outcomes on Ambassadorial Leadership Factors

Variable	Beta	t-value
IBS	.256	2.84**
EBS	-.023	-0.272
SL	.234	2.35**
RC	-.022	-0.245
AD	.314	3.58**

Notes: R^2 = .38; ** = $p<.01$.

We then conducted a hierarchical regression analysis to determine whether the Ambassadorial items explained any additional variance in outcome over and above that explained by the Transformational Leadership variables. The results showed a significant increment in the squared multiple R when the five Ambassadorial items were added (ΔR^2 = .043; F = 3.45; df = 5/121; $p<.01$).

4   Discussion

Our results showed that our original four-factor model did not explain our data well and that a five-factor model was more appropriate. Our data indicate that the Ambassadorial model may complement the Transactional leadership model. The discriminant validity of the Ambassadorial factors was supported with relatively low correlations with the Transactional factors. In addition, the Ambassadorial factors predicted outcome variables and explained additional variance after the transactional factors were entered in a hierarchical regression analysis.

Although these results are promising, it should be noted that the pilot data collected in this study was not an ideal dataset with which to fully examine the Ambassadorial model. Our intent was to examine the convergent and discriminant validity of the Ambassadorial factors, but we did not collect data indicating whether the project teams were highly virtual or not. Our expectation is that as teams become more virtual with greater geographic and cultural differences the importance of the Ambassadorial factors in influencing team performance will increase. As a result of this pilot we have revised our questionnaire around the five factors suggested by our pilot data. We have added some new items and rewritten some others based on feedback from participants and experts. Preliminary indications are that the five-factor model of Ambassadorial leadership has sufficient construct validity to proceed with a larger scale data collection.

We are planning to collect data from several organizations with a mix of globally distributed teams with functional and cultural diversity. Our objective in this research will be to further examine the role of the Ambassadorial model and its influence on performance outcomes as measured by survey responses and organizational metrics. We will examine the following model, with the new, expanded dataset and we will be able to report on these results in July.
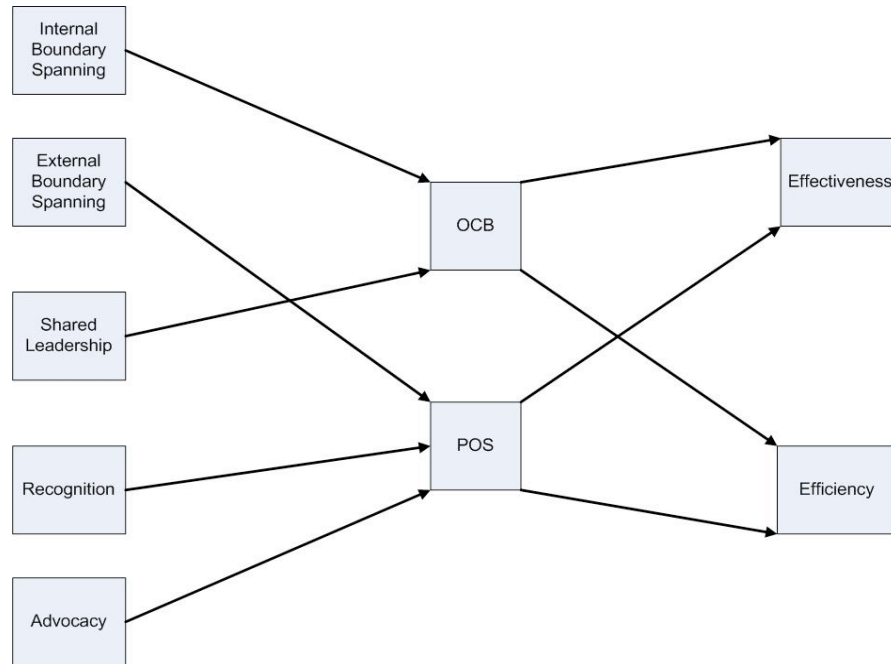

Figure 1. Proposed Ambassadorial Leadership Model

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