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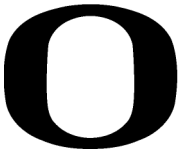

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Trust and Member Inclusion as Communication Factors to Foster Collaboration in Globally Distributed Teams

CAPSTONE 1 Bibliography

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Introduction

Problem

As the information demands of a globalized work context becomes more evident, work and tasks once performed at a single location have been shifted to globally distributed interdependent locations (Gupta, Hedberg, Hou,, Prendergast, & Crk, 2012). Gupta et al., (2012) describe this situation as the 24-Hour Knowledge Factory, a concept defined as "… separate and distinct global operating centers that facilitate the transfer of information from one work location to another, thus allowing for continuous operation (Abstract)" (p. 100). They provide the example of three or more globally distributed teams collaborating within each respective time zone, and transferring unfinished work at the end of their work day to another team which picks up where the others left off. This *24-Hour Knowledge Factory* enables work on a non-stop basis, potentially increasing *task or project efficiency and productivity* (Gupta, et al. 2012).

However, non-stop work is only one example of the potential benefits of globally distributed or dispersed teams. Bosch-Sijtsema, Fruchter, Vartiainen, and Ruohomaki (2011) express that combining resources among globally distributed teams to accomplish tasks, may also increase *team effectiveness and productivity*. Schilling (2013) notes "… separating the teams from the rest of the organization permits them to *explore new alternatives*, unfettered by the demands of the rest of the organization" (p.215). And Gajendran and Joshi (2012) add that it is common for software companies to rely on globally distributed teamwork in order to afford *best utilization of personnel's skill sets*, regardless of their location.

The growing use of globally distributed teams has led many major US corporations to employ virtual teams; as noted by Lepsinger and DeRosa (2010) in a study conducted by Intel Corporation's Communications department (ACM3), roughly 67 percent of the company's employees participated in virtual teams. Virtual teams play an integral part in this [globally] distributed team environment (Jarvenpaa & Leidner, 1999). Jarvenpaa and Leidner (1999) describe a virtual team as one in which members are separated by location and tasked with a common collaborative project, but due to economic and/or practical constraints, computer-mediated communication (CMC) provides the only viable method of communication.

Researchers have observed an increase in reliance on virtual teams and tools to support collaborative work within globally distributed teams (Bosch-Sijtsema et al., 2011). Bosh-Sijtsema et al. (2011) state "… information and communication technology (ICT) is substantially imbedded in [these] workplaces. The connectivity enabled by these technologies has opened new opportunities for how, when, and where people work" (p. 281).

However, Frame, Austen, Calleja, Dove, and White (2009) report that globally distributed team members tend to use communication tools commonly employed to support non face-to-face interactions, (e.g. telephone calls, videoconferencing, and email) to also support collaboration, but attest that these methods are "… woefully inadequate, and at best support only periodic updates of work carried out by individuals" (p. 1052). They also note that these are often the only communication options available between these distributed team members. As early as 1999, Jarvenpaa and Leidner predicted that lack of continuous face-to-face (F2F) interaction between team members can have a negative impact on team collaboration. More recently, Majchrzak, Malhotra, and John (2005) describe this outcome as resulting from

confusion on team tasks, roles, and responsibilities. Fiol and O'Connor (2005) additionally describe feelings of isolation, which can diminish motivation to collaborate. And Crisp and Jarvenpaa (2013) refer to a significant loss of trust among team members.

Garrison, Wakefield, Xu, and Kim (2010) define globally *distributed* teams as "… temporary teams of people who are connected via communication technologies across functional, organizational, and/or geographic boundaries in order to combine skills and resources to accomplish a goal" (p. 28). Muethel, Siebdrat, and Hoegl (2012) note that globally *dispersed* teams are also distributed, but are not only limited by this geographic dispersion but also by CMC, national diversity, and flexible membership. Consistent with distributed team literature (Garrison et al, 2010; Muethel et al., 2012) and in the context of this research, the terms *globally distributed teams* and *globally dispersed teams* are used synonymously.

Purpose

Researchers have struggled to locate one common definition for communication (Littlejohn & Foss, 2005). Tubbs and Moss (2006) describe communication as a process that is intangible and ever-changing and state "communication is effective when the stimulus as initiated and intended by the sender, or source, corresponds closely to the stimulus as it is perceived and responded to by the receiver" (p. 24). However, it is not simple; outside factors can influence the effectiveness of communication in virtual teams, including emotion display norms (Glikson & Erez, 2013), trust (Crisp & Jarvenpaa, 2013.), and member involvement or inclusion (Guenard, Katz, Bruno & Lipa, 2013).

Additionally, Mortensen and Neeley (2012) state "globalization increasingly requires a distributed workforce to collaborate across far-flung locales" (p. 2207) which further impacts factors that affect communication. Scott (2013) affirms "when team members are separated by distance, time, and culture, they often experience difficulties in developing trusting relationships and negotiating conflict" (p. 301).

This study is based on the assumption that if members in globally dispersed teams can identify the factors that tend to most impact virtual communication, they may be able to influence these communication factors to effectively support collaboration. For example, Larson (2010) notes that including team members during the decision making process can spark innovation by incorporating multiple diverse problem-solving approaches. As reported in studies on factors of communication in virtual team collaboration, *inclusion* is a key factor that impacts the quality of communication in globally distributed teams (Bell & Kozlowski 2002; Griffith et al. 2003; Jarvenpaa & Leidner, 1999; Kirkman & Mathieu, 2005; Maznevski & Chudoba, 2000; O'Leary & Cummings, 2007; Zigurs, 2003).

While research has been conducted on communication factors that affect virtual teams and organizations, (Lepsinger & DeRosa, 2010; Malhotra, Majchrzak. & Rosen, 2007; Majchrzak, Malhotra, & John, 2005; Maznevski & Chudoba, 2000; Wiesenfel, Raghuram, & Garud, 1999) few studies have specifically examined what factors create and foster collaboration within these globally distributed teams. The purpose of this annotated bibliography is to identify literature that explores two key communication factors that could effectively create and foster collaboration in globally distributed teams: (a) trust, and (b) inclusion. Mayer et al. (1995) and Jarvenpaa, Knoll, and Leidner (1998) define *trust* as an individual's or group's belief that their

distant team members will be accountable to each other and deliver on mutually agreed upon actions in distributed teams. Katz and Miller (1995) describe *inclusion* as a sense that team members experience when they feel valued, respected, are seen as individual, and are able to attain a sense of membership within a collaborative setting.

Main research question. As collaboration becomes increasingly important in today's global workforce (Guenard et al., 2013), how can the communication factors that appear to have the most potential to support collaboration be better utilized in globally distributed teams?

Sub-questions. Drawing on previous collaboration studies in virtual and/or globally distributed teams, *trust* and *team member inclusion* are consistently regarded as key communication factors (Crisp & Jarvenpaa, 2013; Guenard et al., 2013; Jarvenpaa, et al. 1998; Muethel et al., 2012). Building on these collaboration studies and definition of *trust*, how can globally distributed teams facilitate the development of *trust*? As studied by Guenard et al. (2013) how can globally distributed teams facilitate the development of *inclusion*?

Audience

While the results of this study are intended to be helpful for anyone who works in or manages a [globally] distributed team, the specific audience for this study is identified as field service technicians, including field managers. *Field service technicians (FSTs)* consist of a sub-group of knowledge workers (KW) who troubleshoot equipment problems and perform repair from within globally distributed team environments and contexts (Bosch-Sijtsema, Ruohomäki & Vartiainen, 2011; Lin, Chiu, Joe & Tsai, 2010). FSTs utilize a collaborative environment for work as defined by Gutierrez (2008) "… gathering partners distributed in space, time, and

organizations – among several organizations required to complete a given task, to achieve a given goal, or to allow enterprises to create a partnership for specific projects" (pp. 22-23).

Globally distributed team members are not collocated, and frequently engage in problem-solving tasks requiring the use of multiple knowledge sources and networks to search for solutions (Gajendran & Joshi, 2012). These teams are often charged with creating innovative products and services, yet struggle with multiple challenges: distance, diversity, and technology (Gajendran & Joshi, 2012). FSTs working for the Department of Defense (DOD), and operating in a military environment, encounter these challenges with the included unique challenges of timeliness, accuracy, speed of exchange, and security; each of these factors increases the chance of an even more fragmented team environment (Gajendran & Joshi, 2012; Tutino & Mehnen, 2013). As noted by Tutino and Mehnen (2013) the importance of this rapid exchange of communication in globally distributed teams is fundamental for command and control across the battlefield. As a field service employee working for the DOD, this researcher has personally observed that the work of FSTs who must collaborate within a globally distributed and virtual team context, can become compromised.

Search Report

Search strategy. Specific references selected on this topic are located using UO libraries. Creswell (2009) instructs researchers to conduct initial searches with key words within topic or preliminary readings by locating material within an academic university or college library. Creswell (2009) additionally emphasizes the importance of assessing whether chosen articles further contribute to understanding the topic. Data collection is conducted by using the

University of Oregon online databases, with a concentration on factors in *virtual communication*, *collaboration*, and *distributed* and/or *geographically distributed team communication*.

Established indexing descriptors. One problem facing many who work in globally distributed teams: is how to maintain effective virtual team communication to support collaboration. The main research question addressed in this annotated bibliography is: What factors are most likely to create and foster collaboration among members of globally distributed [virtual] teams? Factors in virtual team communication are studied by a wide range of disciplinary contexts, including psychology (Crisp & Jarvenpaa, 2013), engineering (Bosch-Sijtsema & Sivunen, 2013) and education (Betts, 2009).

Initial searches conducted centered on globally and/or distributed teams. Searches are framed based on key terms developed by extrapolating from a combined set of preliminary factors that negatively impacts teams when face-to-face interactions are limited. Key terms extracted from these and other authors include:

- Collaboration
- Effective communication, organizational communication, communication
- Globally and/or geographically distributed teams
- Team member commitment, inclusion
- Virtual leadership, communication, trust, and identity
- Virtual work/worker, workspace, team, trust, performance

Search engines and databases. Searches are conducted with identified key words and using UO "OneSearch" tool available in University of Oregon online libraries (limited to the last

5 years of publication). Initial searches center on globally and/or distributed teams. Specific databases include: Journal Storage (JSTOR), Academic Search Premier, Sage Complete, Web of Science, and Google Scholar. JSTOR and the Academic Search Premier garner the most results. Do to the long history of study of this topic within the field of psychology and telecommunications, it is not surprising that most relevant articles come from Web of Science and Institute of Electrical and Electronics Engineers (IEEE) journals.

As topics focusing more on the factors that impact communication among members of globally distributed team emerge, articles that were more technology driven are documented for later review, with a refocusing and greater emphasis on factors that impact the quality of collaboration.

Documentation approach. Articles are stored electronically in full portable document format (PDF) in a folder and renamed to the title of publication with a proceeding number, according to the date of retrieval, in ascending order. Another document is used as a reference document, with corresponding numbers and included APA citation. Creswell (2009) notes during the documentation process, it is important that the researcher begin to construct a visual picture of previous research on their topic or build a *literature map*. As articles for this research are eliminated based on reference selection evaluation criteria and contradictory evolving literature map of trust and inclusion, PDFs are removed and both documents updated to reflect the current working documents.

Reference evaluation criteria. Verification strategies employed consist of (a) description of the underlying assumption of the [researcher], (b) using only peer-reviewed articles versus non-peer reviewed, and (c) providing a descriptive framework so that those who

wish to continue or audit this study, can use it for comparison (Creswell, 2009). References chosen are selected according to University of Oregon *Critical Evaluation of Information Sources*. This reference states that information sources should be credible, in that they are authoritative, objective, and should be further scrutinized for quality, currency, and relevancy (Bell & Frantz, 2013). To comply with this set of evaluation criteria, references are selected by (a) publication date (published work in the past 5 years); (b) publication type (peer-reviewed academic works found in academic journals or books); (c) availability (articles must be available in full text form); and (d) purpose/focus on communication key factors that impact collaboration in globally distributed teams.

Annotated Bibliography

The following Annotated Bibliography presents 15 references that examine communication factors that are most often described in literature to effectively support collaboration in globally distributed teams. References are selected to help field service technicians and IT project managers address one aspect of virtual team communications: understanding key factors that support collaboration in globally distributed environments. References are presented in two categories that describe two key communication factors identified in literature: (a) trust among team members, and (b) member inclusion.

Each annotation consists of three elements: (a) the full bibliographic citation, (b) an abstract, and (c) a summary. The abstracts included are either complete as published, or are slightly modified for length and/or content relevance (Tomory, 2010). The summaries present a discussion of *trust* and *member inclusion* among [globally] distributed teams. Optimistically, the explication of these factors could help field service technicians and IT project managers use these to better facilitate collaboration in globally distributed environments.

Trust as a Key Communication Factor to Support Collaboration in Globally Distributed Teams

Al-Ani, B., & Redmiles, D. (2009). Trust in distributed teams: Support through continuous coordination. *IEEE Software, 26*(6), 35-40.

Abstract. The article discusses the factors that influence trust among distributed software teams. According to the author, trust is critical for a distributed software engineering team because it manages uncertainty and complexity in collaboration for remote

members. He says that a tool has been developed based on the continuous coordination (CC) paradigm to address the concern of team trust. The principles of the CC paradigm are outlined. It suggests that team size, project type and team diversity are forces that impact trust in distributed teams.

Summary. In this article, *trust* is defined as a key factor in collaboration of distributed teams. The authors expand that theory to state that the lack of this *trust*, or *distrust*, produces negative collaboration effects such as constant monitoring of other teammates and/or working in isolation. Through a series of one-on-one interviews, consisting of 16 participants and experience from 3 to 45 years, and a mean of 19.3 years of experience within collocated and distributed projects, the authors conclude that while project type, team size, and diversity are forces that affect collaboration in distributed teams, in order to facilitate the development of *trust* to support *collaboration*; teams must (a) provide awareness of key coordination events and (b) visualize a larger context to the distributed project. In addition, communication within the team must (a) contain pertinent coordination information, (b) engage with appropriate personnel, (c) be conducted at the right time, and (d) be non-obtrusive. The authors seek continuous coordination (CC) tools to bridge this gap, increasing team member visibility, thus promoting *trust* and effective collaboration.

Crisp, C. & Jarvenpaa, S. (2013). Swift trust in global virtual teams trusting beliefs and normative actions. *Journal of Personnel Psychology, 12(1), 45-56.*

Abstract. Ad hoc global virtual teams are associated with swift trust - a unique form of trust in temporary systems. Cognitive components of swift trust render it fragile and in

need of reinforcement and calibration by actions. Action components of swift trust are undertheorized as are the links to team performance. We elaborate on the normative action processes of swift trust and their relationship to performance, and then report results from a longitudinal quasi-experimental study of 68 temporary virtual teams with no face-to-face interaction. Results provide support for our theory about how the normative action processes involve setting and monitoring performance norms that are supported by early trusting beliefs and that increase late trusting beliefs and consequently team performance in virtual teams.

Summary. In this article, the authors seek to advance theory regarding *swift trust* in globally [distributed] virtual teams (Jarvenpaa, Knoll, & Leidner, 1998) adding that although *trust* is swift in nature, it is conditional, and in order to facilitate the development of this *trust* in global [distributed] virtual teams, it requires a set of *normative* actions. The authors theorize that *normative actions* perform an intermediary function, facilitating the development of *trust*, by building on early trusting beliefs to affect late trusting beliefs. *Normative actions* identified in this study consist of setting performance norms (e.g. member goals, technology, and CMC norms) and then monitoring these standards (e.g. interpreting, tracking, and transmitting information). Based on quasi-experimental data gathered through surveys with 68 globally [distributed] virtual teams, charged with building a business plan, they found that the direct effect of early trusting beliefs on late trusting beliefs was not significant, yet the direct correlation from early and late beliefs to *normative actions* was significant. The authors conclude that use of *normative actions* can (a) regulate behavior to reinforce late trusting beliefs, (b) increase team performance, and thus (c) better support collaboration amongst

distributed team members. Team performance is determined by quality and timeliness of submitted plan.

Daim, T., Ha, A., Reutiman, S., Hughes, B., Pathak, U., et al. (2012). Exploring the communication breakdown in global virtual teams. *International Journal of Project Management, 30*(2), 199-212.

Abstract. Virtual matrix-managed teams with geographically dispersed members are becoming increasingly common in the high-tech sector. These teams, referred to as global virtual teams (GVTs), are generally described as culturally diverse, geographically dispersed, electronically communicating workgroups. They rapidly form, change, and dissolve due to dynamic changes in the market. In addition, most GVTs today have team members spread among several projects with competing priorities. Communication breakdown can wreak havoc on a project as team members struggle to effectively communicate and work with one another. As a result, project delivery risks with distributed teams tend to be greater when compared to co-located teams. To address this critical issue, this study investigates the types of factors that significantly contribute to communication breakdown by identifying five distinct areas through a series of interviews with project team members in high-tech companies. These areas are trust, interpersonal relations, cultural differences, leadership and technology. These criteria are analyzed using mathematical Decision Models taking expert opinions from professionals who worked in GVTs.

Summary. This article investigates common factors, supported by literature and interviews in globally distributed virtual team communication, which drastically

contribute to communication breakdown. In addition, surveys with several distributed team experts analyze data to provide possible mitigation tactics. This research suggests that, along with other factors such as cultural differences and leadership, *building trust* is especially difficult to facilitate due to lack of (a) common social norms, (b) frequent social interactions, (c) and face-to-face interactions, yet is a core pillar in any high performance team. Data extrapolated from literature research provides the foundation for a pair-wise set of survey questions which were then turned into positive questions to form the basis of a series of face-to-face interviews with ten industry experts. Results from this study were compiled using in house software developed at Portland State University, (PCM tool), to compare each statement's significance and impact based on its final mean weight Conclusions indicate that globally [distributed] virtual teams can enhance collaboration and better facilitate the development of *trust* by (a) clearly defining roles and consistent role behavior, (b) encouraging social interaction amongst team members, (c) use of constructive, frequent, and timely responses, (d) considering cultural differences, (e) fostering enthusiasm, and (f) providing strong leadership.

McNab, A., Basoglu, K., Sarker, S., & Yu, Y. (2012). Evolution of cognitive trust in distributed software development teams: A punctuated equilibrium model. *Electronic Markets, 22*(1), 21-36.

Abstract. A significant body of literature has addressed trust in distributed teams. However, several important issues such as 1) trust in distributed software development teams, 2) the evolution of cognitive trust, and 3) the role of communication media in trust development have not been adequately addressed. The objective of this paper is to

address the void discussed above by conducting a longitudinal study to examine the evolution of cognitive trust among distributed software development teams from USA and Norway or Switzerland. The results suggest that cognitive trust develops in accordance with the tenets of the Punctuated Equilibrium Model (PEM). Additionally, our study also suggests that different factors are important for trust building during the different stages of a software development project. The findings contribute to the body of trust research and to practice by identifying stages in a software development project during which managerial intervention can help elevate trust levels.

Summary. In this article, the authors seek to understand the development of trust over time and its antecedents in [globally] distributed teams based on the theoretical guide of the punctuated equilibrium model (PEM) (Gersick 1988). This model states that teams go through two pivotal *phases* during formation and the formation of *trust,* impacting effective team collaboration and efficiency. The *early phase* includes: (a) stages of weak structure and interactions, and (b) lack of common understanding or frame of reference, but once the team reaches a transition point, limited time for completion triggers a second *transition phase*, where (a) dramatic restructuring, and (b) shared frame of reference are developed to guide the team to completion. Based on this model, the authors theorize that during the *early phase*, individuals will form a basic level of *trust* based on (a) members' reputations, and (b) early stereotypes, but after the *transition phase,* team members will increase communication with dispersed team members, thus impacting *trust* through the formation of more accurate trusting beliefs. To test this model, the authors conducted a longitudinal study, within three distributed teams. Teams from three separate countries, including 81 participants in software development, were charged with developing an

information system for an organizational client over a semester term. Communication between the distant members was limited to synchronous chat, an asynchronous discussion board, and email. Data collected if the form of a questionnaire at the beginning and towards the end of the project, measured on a seven point likert-type scale and analyzed with PLS Graph 3.0, revealed positive facilitation of *trust* in distributed teams during two phases: (a) *early phase:* unit grouping, message-based stereotyping, and behavior-based stereotyping, and after (b) *transition phase:* unit grouping, message-based stereotyping, and technical skills-based stereotyping, thus (c) increasing cohesion and satisfaction, furthering the collaborative process.

Mortensen, M., Neeley, T. (2012). Reflected knowledge and trust in global collaboration. *Management Science, 58*(12), 2207-2224.

Abstract. Scholars argue that direct knowledge about distant colleagues is crucial for fostering trust in global collaboration. However, their arguments focus mainly on how trust accrues from knowledge about distant collaborators' personal characteristics, relationships, and behavioral norms. We suggest that an equally important trust mechanism is "reflected knowledge," knowledge that workers gain about the personal characteristics, relationships, and behavioral norms of their own site through the lens of their distant collaborators. Based on surveys gathered from 140 employees in a division of a global chemical company, we found that direct knowledge and reflected knowledge enhanced trust in distinct ways. Although both enhanced feelings of closeness with others, results indicate that direct knowledge increased focal actors' understanding of their distant colleagues, whereas reflected knowledge promoted feelings of being

understood. We discuss implications of reflected knowledge to theories of trust and interpersonal dynamics in globally distributed collaboration.

Summary. This article adds to the common body of knowledge of fostering *trust* in distant collaborative environments by proposing *reflected knowledge* can have positive impacts in fostering trust in global [distributed] collaboration. Through an extensive review of literature the authors theorize that while *direct knowledge* or information about relationships, personal characteristics, and behavioral norms of a distant collaborator provide a strong foundation for *trust* and improved collaborative experiences, *reflected knowledge* can be seen as complementary and also increase *trust* in globally distributed teams. The authors define *reflected knowledge* as information within the same confines of *direct knowledge*, but yet instead, apply these aspects to one's own team or reflect. The authors test this theory by developing a hypothetical model in which *firsthand experience*, *direct knowledge, reflected knowledge*, and collaborative *trust* in teams, is linked. Through a seven-point Likert scale survey study of a large multinational company spanning 6 countries: Germany, United Kingdom, Korea, Taiwan, Japan, and China (Hong Kong), and conducting follow-up interviews, the authors found that in teams ranging from 0 to 138 months of *firsthand knowledge* experience, that *direct* and *reflected knowledge* did have an impact on trust and collaboration, but not as first presumed. While results of this test show *reflected knowledge* does not promote understanding of distant collaborators' expectations**,** they did find that gaining *reflected knowledge* can (a) affects a team's ability to be understood by distant collaborators, and (b) impact closeness to distant collaborators, both of which significantly impact *trust* with distant collaborators. These results indicate that field managers or managers of globally

distributed teams should promote *reflective knowledge* through increasing *firsthand* and/or *direct knowledge* in order to cultivate *trust* and improve collaboration.

Pantelli, N., & Tucker, R. (2009). Power and trust in global virtual teams. *Communications of the ACM, 52*(12), 113-115.

Abstract. The article discusses the question of how power is exercised in global virtual teams and how it can be used to effectively contribute to the development of trust. The insufficient attention given to power dynamics in the development of understanding with regard to virtual teams in the early 21st century is noted, mentioning that more should be done to explore the nature of power within virtual teams that are geographically distributed. The need for greater understanding with regard to computer-mediated interactions and the dynamics of virtual teams is also noted.

Summary. In this article the authors theorize that *power dynamics* is an unexplored communication factor in globally distributed team collaboration and facilitation of *trust*. Through a qualitative study of 18 globally distributed teams and interviews consisting of open ended questions, the researchers found underlying characteristics that contribute to high performing teams. Key relevant points in this article are that in high-performing teams (a) shared goals was a common factor, (b) *power differentials* shift from one member to another depending on task, (c) *informational power* was the most important, (c) the use of *coercive power* was minimal or rarely used with more emphasis placed on *persuasive power*, and (c) facilitators can play an integral role in facilitating *power dynamics* in collaborative teams by minimizing *power differentials.*

Purvanova, R. (2013). The role of feeling known for team member outcomes in project teams. *Small Group Research, 44*(3), 298-331.

Abstract. This research introduces the concept of feeling known--or the belief that others have developed accurate opinions of one's traits and characteristics--to the team literature. Various theoretical streams posit that acquiring a sense of being known and understood is a central human motivation that leads to positive outcomes for individuals. The present research links team member's sense of feeling known with team member's reports of interpersonal trust, personal learning, and project satisfaction in a large sample of project teams. Using a longitudinal study design, this research finds that feeling known is indeed a strong predictor of proximal and distal team member outcomes. Additional analyses reveal that team members' sense of feeling known plays a role in predicting outcomes for both face-to-face and virtual team members, despite the fact that virtual team members report feeling less known than face-to-face team members. The practical significance of these results is discussed.

Summary. This article provides evidence that the concept of *feeling known* is a driving factor in gaining interpersonal trust between [globally distributed] virtual team members. Based on prior research, the authors define being known as a human need to be understood, receive positive acknowledgement of one’s traits, or be humanized by team members. The authors hypothesize that within the lifespan of a team, *feeling known* early on can positively affect *trust* later within this lifespan. Conversely, *trust* early on in the lifespan of a team can positively affect *feeling known* later in the team lifespan. Additionally, the authors add that both *feeling known* and *trust* are antecedents to virtual

team's [collaboration] performance and can predict outcomes by positively affecting team member perception and work satisfaction. Data collected at a large US university through the Department of Psychology, where 101 students were grouped into four-member teams (half face-to-face teams, and half virtual) over the course of a semester and charged with conducting research (using the methodology of their choice) provided confirmation of these hypotheses. With the project split into 12 weeks and 4 phases, at the end of each phase, team members completed web-based surveys: five-item scales to assess self-verification/identity and Schoorman, Mayer, and Davis's (1996) nine-item scale to assess *feeling known*. Team member outcomes employed six-items, based on Hackman and Wageman's concept (2005) and incorporating (a) newly acquired skills, (b) newly discovered qualities, and (c) learning how to perform on a team. Results emphasize the importance of *feeling known* and find when attained, members (a) understand each other's skill sets better and thus gain more perspective, (b) are more committed, thus (c) work more fluidly as a team, and (d) are empowered. These factors increase: (a) individual motivation, (b) collaborative performance, and are (c) directly linked to interpersonal *trust*.

Tseng, H., & Yeh, H. (2013). Team members' perceptions of online teamwork learning experiences and building teamwork trust: A qualitative study. *Computers & Education, 63*, 1-9.

Abstract. Teamwork factors can facilitate team members, committing themselves to the purposes of maximizing their own and others' contributions and successes. It is important for online instructors to comprehend students' expectations on learning collaboratively.

The aims of this study were to investigate online collaborative learning experiences and to identify important factors that were crucial for building teamwork trust. A qualitative research method was utilized in the study. Data were collected from students' responses of three open-ended questions and interviews. The results indicated that students who enjoyed working in the group setting had a good relationship with their team members and they trusted their team members. In contrast, the questionable behaviors of members (lack of communication and low level of individual accountability) were negative factors of their teamwork experiences. In addition, students considered individual accountability, familiarity with team members, commitment toward quality work, and team cohesion were important factors for building trust with team members. Quantitative analyses confirmed that teamwork trust was correlated significantly with two of the important factors for building trust indicated by team members: familiarity with members (r ¼ .74) and team cohesion (r ¼ .79). Implications and recommendations for future research were also discussed.

Summary. This article seeks to identify factors critical for fostering *trust* in [distributed] virtual teams within an educational context, thus enhancing the collaboration. While the study is from an educational perspective, participants in this study operate in a non face-to-face or *virtual environment* and are bound by a common collaboration project. Therefore, common themes run parallel to members who work in distributed virtual teams and this study adds to this body of knowledge. In this article, the authors state that *trust* is even more important and complicated in a collaborative environment because relationships in this type of environment involve multiple people to trust and each with their own set of attributes. To identify *trust* factors, fifteen graduate students participated

in this qualitative study. With each of the four teams assigned to build five projects, four design documents and one self-paced instructional unit, within fifteen weeks, common themes impacting *trust* and *collaboration* surface. Through a series of open-ended questions, completion of the Teamwork Dynamic Scale, and random face-to-face or phone interviews, common themes consisting of positive and negative aspects of virtual team collaboration identified that most important variables of *trust* impacting virtual team's performance are: (a) accountability, (b) familiarity with other team members, (c) shared quality of work commitments, and (d) team cohesion. These findings suggest that field service technicians and managers, or members of [globally distributed] virtual teams can facilitate the development of *trust* in collaborative environments by (a) sharing feelings, ideas, thoughts, and conclusions, and (b) encouraging other group members' to respond with support and acceptance, and by discouraging factors that defy *trust*: (a) lack of communication, (b) lack of individual accountability, and (c) uncertainty of contribution.

Inclusion as a Key Communication Factor to Support Collaboration in Globally Distributed Teams

Al-Ani, B., Horspool, & A., Bligh, M. (2011). Collaborating with 'virtual strangers': Towards developing a framework for leadership in distributed teams. *Leadership, 7*(3), 219-249.

Abstract. The current study qualitatively explores emergent leadership themes within distributed teams in a large international Fortune 500 organization. Sixteen employees across different organizational sites were interviewed about experiences in both collocated and distributed teams. Previous research has typically highlighted how these

teams fall on a continuum of virtuality, from purely face-to-face to entirely distributed, as well as emphasizing the importance of distributed team leaders using technology to create a virtual presence along this continuum. In addition, extant research emphasizes that leadership functions may need to vary depending on the geographic and temporal dispersion of the team. Consistent with traditional leadership theories, our findings suggest that distributed team leaders play an important role both in structuring group tasks and supporting socio-emotional group processes, and these functions vary by team distribution level. The idea that distributed teams are particularly conducive to more non-traditional forms of leadership also appeared as a consistent theme.

Summary. In this article, the authors seek to add to the importance of leader's role in distributed team collaboration. Through an extensive review of literature, the authors developed interviews and survey questions to identify themes from a globally distributed team spanning 26 different locations internationally to become the basis of an open-ended interview and questions for 16 software engineers from a large Fortune 500 organization. The authors detail six aspects of distributed team leadership themes identified by employees: (a) team distribution, (b) technology, (c) leadership roles, (d) leader emergence, (e) communication, and (f) *trust*. Their findings suggest distinctive skills are essential to overcome unique challenges in (a) coordinating team activities, (b) establishing *trust*, (c) reducing the impact of cultural and communication barriers, and (d) building effective *inclusive* relationships, to lead in globally collaborative environments. Finding suggest that the following effective leadership principles (a) structuring of tasks, (b) providing clear goals and direction, (c) communicating praise, and (d) sharing progress with the team, can foster *trust* and effective *inclusive* relationships.

Gajendran, R., & Joshi, A. (2012). Innovation in globally distributed teams: The role of LMX, communication frequency, and member influence on team decisions. *Journal of Applied Psychology, 97*(6), 1252-1261.

Abstract. For globally distributed teams charged with innovation, member contributions to the team are crucial for effective performance. Prior research, however, suggests that members of globally distributed teams often feel isolated and excluded from their team's activities and decisions. How can leaders of such teams foster member inclusion in team decisions? Drawing on leader-member exchange (LMX) theory, we propose that for distributed teams, LMX and communication frequency jointly shape member influence on team decisions. Findings from a test of our hypotheses using data from 40 globally distributed teams suggest that LMX can enhance member influence on team decisions when it is sustained through frequent leader-member communication. This joint effect is strengthened as team dispersion increases. At the team level, member influence on team decisions has a positive effect on team innovation.

Summary. In this article, the authors discuss the impact of *member inclusion* on team performance and state that in distributed team environments often remote members' sense (a) an uneven division of task related information, and (b) that they are excluded in the decision process, and result in feelings of isolation. Their research suggests members' influence on team priorities, goals, and decisions play an integral in fostering *inclusion*. To gain team *inclusion*, they theorize that the leader's role is a critical to this process and refer to the idea from Graen and Scandura (1987) that leader–member exchange (LMX) is an instrumental component for fostering this involvement in globally distributed teams.

Through an online survey of a large multinational IT company, consisting of 167 participants from 40 globally distributed hardware and software teams, (including Europe, Japan, Korea, and Australia) charged with complex problem-solving tasks, they found that high-quality, frequent leader-member exchange (LMX) provides the following benefits: (a) motivates members' inputs and decisions, and (b) enhances members' confidence in team contributions, and thus facilitates innovation, promoting *inclusion.*

Guenard, R., Katz, J., Bruno, S., & Lipa, M. (2013). Enabling a new way of working through inclusion and social media: A case study. *OD Practitioner, 45*(4), 9-16.

Abstract. The article presents a case study on the implementation and adoption of social media tools to create a Virtual Technical Network (VTN) in Merck & Co. Inc.'s Science, Technology, and Commercialization function. It shows that VTN allows the organizations to make problems visible and solve them faster, accelerate decision making, and increase innovation. It indicates that VTN provides significant business impact in terms of financial savings, production facility uptime, and employee engagement.

Summary. The authors discuss the findings of a case study conducted on a multinational organization, consisting of approximately 3,000 scientists, engineers, and administrative support dispersed to over 50 locations and 20 countries worldwide. While this case study describes the implementation of social media tools and virtual technical network (VTN) to support this global workforce, the authors also shed light on important factors in communication that advance *member inclusion*. This article highlights the importance of (a) knowing *what knowledge* must flow across the business, (b) understanding how

people interact around technology solutions, (c) incorporating communication *rules of engagement*, (d) setting vision and scope, and (e) creating communities of communication, based on common interests and needs. This case study suggests that coupling these factors with VTN and/or social tools can (a) improve problem solving through increased visibility, (b) increase knowledge transfer, (c) accelerate the decision-making process, and (d) increase innovation, thus facilitating *member inclusion.*

Joshi, A., Lazarova, M., & Liao, H. (2009). Getting everyone on board: The role of inspirational leadership in geographically dispersed teams. *Organization Science, 20*(1), 240-252.

Abstract. A rich body of research in the area of leadership has examined the influence of transformational/charismatic forms of leadership on employees' motivation, attitudes, and behaviors. This research is based on the assumption that leaders are able to influence followers based on close, sustained, and personalized contact with them. However, new organizational realities are challenging this assumption. Drawing on the intersections between social identity theory and leadership research, this study highlights the importance of inspirational leaders who, by developing socialized relationships with team members, can foster attitudes that are critical for team effectiveness in geographically dispersed settings. Findings support the role of this form of leadership in dispersed settings. Inspirational leadership emerged as a significant predictor of individuals' trust in team members and commitment to the team. Further, the positive relationship between inspirational leadership and individuals' commitment to the team and trust in team members was strengthened in teams that were more dispersed suggesting that inspirational leaders are important in all contexts but that their importance is underscored

in highly dispersed contexts. Finally, shared perceptions of trust and commitment predicted performance at the team level.

Summary. Due to a weakened state of shared context and social ties in [globally] distributed teams, *inspirational leadership* is considered pivotal in developing socialized relationships and a *collective team* entity, furthering team member commitment, and thus *member inclusion* and *trust*. While previous *social identity* research (Howell & Shamir, 2005) shows that *personal relationships* between leaders and followers are best utilized in the achievement of *personal* goals or awards, conversely, *socialized relationships* bridge the gap between the team members and their *collective identity*. The authors discuss the importance of the role of the leader and use of *social relationships* to build *collective* or *team identity*. Through a web survey of 700 geographically dispersed software and hardware employees, the authors find that the *inspirational leadership* is paramount in (a) communicating a compelling vision, (b) expressing confidence in the team, and (c) energizing the team. This is turn (a) reinforcing common goals, (b) enhancing the team's distinctiveness, and (c) encouraging more interpersonal interactions. Research provided in this article discusses both [communication factors to support collaboration] sub-questions in this annotated bibliography, *trust* and *member inclusion* The authors find that *inspirational leadership* is an antecedent to (a) member commitment, (b) member attitude, and (c) collective team citizenship behaviors, all of which directly impact the development of *trust* and *inclusion*, promoting team performance and collaboration in globally distributed teams.

Privman, R., Hiltz, S., & Wang, Y. (2013). In-group (us) versus out-group (them) dynamics and effectiveness in partially distributed teams. *IEEE Transactions on Professional Communication*, *56*(1), 33-49.

Abstract. In partially distributed teams, where some members are co-located while others are geographically distant, co-located members tend to treat one another as a preferential '"Us" versus treating distant members as the outsiders, '"Them." Research questions: (1) To what extent is Us-vs.-Them reported as a problem across a wide number of organizational partially distributed teams, and is it significantly related to team effectiveness? (2) What do members see as the greatest challenges to partially distributed teams? and (3) Can partially distributed teams overcome in-group dynamics? If so, how? In our literature review, we begin by discussing in-group dynamics to set the theoretical framework for our research. We call these dynamics us versus them (Us-vs.-Them) and show, through empirical studies and organizational studies, what makes partially distributed teams especially susceptible to such dynamics.

Summary. This qualitative study investigates team dynamics between co-located team members and their geographically dispersed collaborators (or partial teams) with a theory of in-group, (us), versus out-group, (them), dynamics. This theory us known as *in-group* dynamics, which can result in loss of shared social identity. Through an extensive literature review, building on the previous studies in distributed group dynamics, the authors find that due to geographical, temporal, and cultural differences, these teams are more susceptible to factors of (a) limited availability, (b) conflicting responsibilities and goals, and (c) uneven communication channels impacting both *trust* and *team member*

inclusion. Through a pilot study of 30 partially distributed team members, researchers tested their initial survey questions and gathered personal experiences to form the basis for an online survey. With 238 participants answering this structured and open-ended online questionnaire, researchers find that *us* versus *them* had a strong impact on team dynamics and effectiveness, but also that good *partially-distributed* team practices such as (a) taking ownership, (b) duel-hatting managers' roles, (c) providing a forum for open communication, (d) and reviewing others work, can promote team spirit and minimize communication barriers to better facilitate *trust* and *member inclusion*, increasing distributed team collaboration.

Scott, M. (2013). "Communicate through the roof": A case study analysis of the communicative rules and resources of an effective global virtual team. *Communication Quarterly*, *61*(3), 301-318.

Abstract. Challenges to effective collaboration are magnified when work teams are composed of geographically distributed members. Team members separated by time, distance, and culture often struggle with issues of trust, conflict, and potentially divisive subgroups. With global virtual teams becoming increasingly common in organizations, it is important to understand how to minimize such interactional difficulties. This study examines rules and resources that members of a corporate global team draw on to structure their interactions. In this case study, team members draw on highly ritualized actions prescribed by their software development process and their enacted values to mitigate their communication challenges.

Summary. In this article, the authors seek to build on previous globally distributed team or global virtual team (GVT) research (English-Lueck, Darrah, & Saveri, 2002; Hinds & Mortensen, 2005) in order to gain a better understanding of communication factors that enable these teams to overcome common GVT challenges such as time, distance, culture, mistrust, and conflict in order to promote collaboration and team *member inclusion*. The authors use a *structurational perspective* (Giddens, 1984), which suggests that interaction *rules* and *resources* play an integral role in overcoming these challenges. Through a combination of observation and semi-structured interviews, with members from existing highly productive software development GVTs, the authors are able to gain a holistic view of the teams' perspectives and social experiences. The specific GVTs chosen for this case study, comprised of distributed teams from US to India, were chosen due to their ability to *effectively collaborate*, i.e. meet deadlines, and gain a high level of productivity, and *inclusive* team member structure, resulting in team member interaction without negative conflict. Scott (2013) states "When studying structuration, researchers may look for instances such as social routines, traditions, norms of social conduct, shared meanings, consensus, procedures and habitual activities" (p. 305). Through this theoretical framework of observation and thematic analysis (Green & Thorogood, 2009; Lindlof & Taylor, 2002), researchers find broad themes and patterns indicating that (a) frequent communication and feedback, (b) shared values or principles, (c) organizational rituals, (d) compromising, and (e) utilization of the *one-team* concept led to a committed GVT collaborative environment in which *member inclusion* was high.

Sha, X., & Chang, K. (2012). The role of leadership and contextualization on citizenship behaviors in distributed teams: A relational capital perspective. *IEEE Transactions on Professional Communication, 55*(4), 310-324.

Abstract. This study provides insights into the role that a leader plays in improving relational capital, thereby motivating team members' citizenship behaviors in distributed teams. We address the following research questions: (1) What is the role of inspirational leadership in cultivating relational capital (i.e., reciprocity and commitment) in distributed teams? (2) Are team members' citizenship behaviors (i.e., knowledge sharing and interpersonal helping) influenced by relational capital in distributed teams? (3) How does technology support for cognitive and affective contextualization facilitate leaders to improve organizational communication? Literature review: The purpose of the review was to provide a theoretical background for the variables in this study. Based on the relevant theories on relational capital, leadership, organizational citizenship behavior (OCB) and contextualization, this study reviewed how previous studies link these theories to one other, and proposed the positive relationship between leadership, relational capital and OCBs, as well as the moderating relationships of technology support for contextualization.

Summary. This article discusses the importance of *inspirational leadership* in the development of *relational capital* within globally distributed teams. The authors state organizational citizenship behaviors (OCB) is a fundamental outcome of *relational capital*. They further theorize that OCB are paramount to team effectiveness because when individuals understand, know, can identify with each other, and feel included, they

are more likely to (a) transfer knowledge, and (b) support team activities. *Relational capital* is defined as the existence of interpersonal relationships inclusive of (a) mutual trust, (b) expectations and obligations, and (c) shared norms is evident in teams' commitment and reciprocity. Through a quantitative survey consisting of 141 questionnaire respondents from distributed teams, researchers suggest a high level of team commitment, citizenship, and *inclusion* can obtained through (a) knowledge sharing, and (b) interpersonal helping. Implications of this study are that when teams are geographically [globally] dispersed, teams could benefit from more emphasis on *inspirational leadership* to drive team members to excel beyond set requirements.

Conclusion

A preliminary review of previous collaboration studies in virtual and/or globally distributed teams revealed that *trust* and *team member inclusion* are consistently regarded as key communication factors that appear to have the most potential to create and support collaboration within globally distributed teams (Crisp & Jarvenpaa, 2013; Guenard et al., 2013; Jarvenpaa, et al. 1998; Muethel et al., 2012). Mayer et al. (1995) and Jarvenpaa, Knoll, and Leidner (1998) define *trust* as an individual's or group's belief that their distant team members will be accountable to each other and deliver on mutually agreed upon actions in distributed teams. Katz and Miller (1995) describe *inclusion* as a sense that team members experience when they feel valued and respected, are seen as individual, and are able to attain a sense of membership within a collaborative setting.

While research has been conducted on communication factors that affect virtual teams and organizations (Lepsinger & DeRosa, 2010; Malhotra, Majchrzak. & Rosen, 2007; Majchrzak, Malhotra, & John, 2005; Maznevski & Chudoba, 2000; Wiesenfel, Raghuram, & Garud, 1999), few studies have specifically examined what factors create and foster collaboration within these globally distributed teams. These factors are examined in a review of selected literature, presented in the Annotated Bibliography section of this document.

Conclusions are derived from the analysis of the selected literature and framed to provide information to field service technicians (FTSs) and/or managers so that they may better facilitate collaboration in virtual and/or globally distributed teams. FSTs working for the Department of Defense (DOD), and operating in a military environment, encounter unique communication challenges of timeliness, accuracy, speed of exchange, and security; each of these factors increases the chance of an even more fragmented team environment (Gajendran & Joshi, 2012;

Tutino & Mehnen, 2013). As noted by Tutino and Mehnen (2013) the importance of this rapid exchange of communication in globally distributed teams is fundamental for command and control across the battlefield. As a field service employee working for the DOD, this researcher has personally observed that the work of FSTs who must collaborate within a globally distributed and virtual team context, can become compromised.

Trust as a Key Communication Factor to Support Collaboration

Trust is a considered a key communication factor and appears as a theme throughout much of the selected distributed/virtual team communication literature (Al-Ani & Redmiles, 2009; Crisp & Jarvenpaa, 2013; McNab, Bosoglu & Sarker, 2012). While trust has proven to be a key component of effective communication and collaboration in distributed teams (Jarvenpaa, Knoll & Leidner, 1998), it is not always easy to achieve (Jarvenpaa & Leidner 1999). Three essential elements identified in the literature are highlighted below.

Continuous coordination. Al-Ani and Redmiles (2009) acknowledge that project type, team size, and diversity are common characteristics of most distributed collaborative teams, but suggest that the potential negative impacts of these can be lessened with better facilitation of the development of trust through *continuous coordination*. Crisp and Jarvenpaa (2013) give examples of how *trust* can be better facilitated to support collaboration in distributed teams through a set of *normative actions*, such as (a) setting goals, (b) setting norms, then (c) monitoring, and (d) providing feedback. Others argue that there are two *phases* in which *trust* is built, and leaders could better facilitate *trust* by understanding and coordinating this process in distributed collaborative environments (McNab, Bosoglu & Sarker, 2012). McNab et al., building on Gersick's (1989) *midpoint transitions* and Punctuated Equilibrium Model, describe these two *phases* (a) an *initial phase* in which teams are in a state of stability and basic forms of

trust are built on stereotypes and other members' reputations, (b) a *midpoint* or *transition phase* in which team's existence and project deadlines force teams to refocus priorities, and (c) a *second phase* in which increased communication allows team members to form more accurate trusting beliefs towards remote team members and trust is dramatically impacted.

Reflected knowledge Some argue that the formation of *trust* in distributed teams is more than a set of communication factors, and requires the team members to understand how their distant collaborators perceive them through a *reflected lens*. Mortensen and Neeley (2012) define this phenomenon as *reflected knowledge* "… knowledge that workers gain about the personal characteristics, relationships, and behavioral norms of their own site through the lens of their distant collaborators" (p. 2207). *Reflected knowledge* can be obtained through *direct/firsthand knowledge* or becoming virtual to one's self (Mortensen & Neeley, 2012).

Mortensen and Neeley (2012) describe this virtualality as "… learning to see one's site and work relationships through the eyes of collaborators" (p. 2208). This knowledge allows the site to gain awareness in the form of perceptions of (a) reliability, (b) concern, (c) team behaviors, and (d) intentions through the viewpoint of distant collaborators. Thus *reflected knowledge* provides the foundation for (a) understanding and, (b) *trust* (Mortensen & Neeley, 2012).

Power dynamics. Other research has shown that *power* is an important element to consider when examining the role of trust (Pantelli & Tucker, 2009). In defining power, Pantelli and Tucker (2009) state "… the capability of one party to exert influence on another to act in a prescribed manner is often a function of both dependence and the use of that dependence as leverage" (Pantelli & Tucker, p. 113). Pantelli and Tucker (2009) suggest that field managers or managers of globally distributed teams could facilitate *power dynamics* more efficiently within

globally distributed teams by (a) using early stage trust building techniques, and (b) encouraging shared understanding, to promote *trust* and collaboration.

Inclusion as a Key Communication Factor to Support Collaboration

Research has shown that member involvement or *inclusion* can have positive effects on collaboration in globally distributed team (Gajendran & Joshi, 2012). Three essential elements are highlighted below.

Inclusive behaviors. Guenard et al., (2013) state that defining communication *rules of engagement* plays a key role in fostering *inclusion*. Katz and Miller (1995) provide a set of what they call *12 Inclusive* Behaviors, designed to produce more inclusive interactions among individuals and teams, including the following team member interactions:

1) Authentically greeting
2) Creating a sense of security
3) Working together for a mutual success and common good
4) Using supportive, active listening
5) Taking challenges head-on
6) Standing your ground, but remain open to new ideas
7) Motivating and building on others' thoughts, ideas, and feeling
8) Creating a shared 360° vision, accepting other people's frame of reference
9) Managing and resolving misinterpretations and incongruities
10) Speaking out about team member harassment
11) Involving team members who understand the whole situation
12) Fostering trust and respect confidentiality

These behaviors provide the foundation for Guenard et al.'s (2013) set of *Dos and Don'ts* for their *rules of engagement* identified below:

Do:

- Honor and respect others to build trust
- Share information
- Ask questions
- Listen
- Create a sense of safety
- Build a 360-degree vision, encompassing multiple perspectives
- Accept other people's frame of reference
- Find out who else is needed
- Share lessons learned
- Give people the context of normal work

Do not:

- Judge
- Withhold feedback
- Refuse to share
- Refuse to contribute energy back
- Avoid building on others' ideas

Scott (2013) notes that similar to factors that effectively foster *trust*, research suggests that *inclusion* is high in teams where frequent communication, feedback, and shared values exist, but that incorporating a *one-team concept* is paramount. Scott (2013) describes the *one-team concept* as one in which (a) an even playing field exists for all team members, (b) team members

perceive equal status, (c) the work load is balanced, (d) power distribution is equal, and (e) members consider themselves as valued, contributing members, regardless of the physical location in which they reside.

Leadership communication. Gajendran and Joshi state that the *leader-member communication* frequency or LMX plays an instrumental role in (a) motivating team members, and (b) enhancing confidence. Due to the potential for a weakened state of shared context and social ties, *inspirational leadership* can play a pivotal role in promoting *inclusion* by reinforcing a collective identity and building organizational citizenship behaviors through (a) communicating a compelling vision, (b) expressing confidence in the team, and (c) energizing the team (Guenard, et al., 2013; Sha & Chang, 2012). Still, team members who must collaborate in globally distributed teams are susceptible to negative, in-group (us) and out-group (them), dynamics. However, these dynamics can be minimize its impact by: (a) creating clear, universal responsibilities and goals, (b) providing equal distribution of information, (c) providing equal consideration for members at different locations, (d) providing guidelines for communication, (e) taking advantage of time zone differences, (f) and incorporating CMC social interaction when feasible (Privman, Hiltz, & Wang, 2013).

Task-focused leadership. Some studies find that distributed teams face cohesion and performance problems, largely as a result of leadership and interaction styles (Balthazard et al., 2004). Leadership has shown to be an important antecedent to understanding distributed team effectiveness (Al-Ani, B., Horspool, A., & Bligh, M., 2011). Al-Ani et al. (2011) emphasize the importance in using task-focused leadership functions in distributed teams, to promote *trust* and *member inclusion* and describe task-focused leadership as one in which "…successful distributed

team leaders coordinate tasks and control the pace and rhythm of work, initiate and structure discussions, and monitor and manage performance outcomes" (p. 220). Leadership roles range from (a) managing distributed meetings and work, (b) extending visibility of the team, (c) initiating team member contact, to (d) encouraging knowledge sharing and motivating, and (e) building team structures and processes (Al-Ani et al., 2011). Al-Ani et al. state "the responsibility [of distributed leaders] for meeting organizational goals requires that *everyone* engage, *involve* others, and take responsibility for owning work and holding each other accountable for accomplishing it" (p. 235).

Leadership roles exist along a continuum, based on *task* or *process-based leadership* direction (Al-Ani et al., 2011). Effective distributed leaders are ones that can employ different roles to accomplish collaborative work, depending on the task, and can increase team effectiveness through the formation of *trust* and member involvement or *inclusion* (Al-Ani et al., 2011).

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