

Coaching From Afar: How Ubiquitous Information Technology Was Used to Develop a Successful Semi-Virtual Team

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Abstract: This study analyzed the communication between a national rowing team and their 'virtual coach' over a period of 18 months. An exploratory analysis of 1500+ emails provided insight into how the coach successfully leveraged ubiquitous information technology to build a high performance team. Zaccaro's (2002) framework of functional leadership and Weick and Robert's (1993) framework of collective mind were applied to understand the coach's approach for developing a non-traditional semi-virtual team; the primary role of Coach was likened to that of "sense-giver" given the charge of developing a "collective mind." This study works to illustrate how ubiquitous technology like e-mails can be strategically used in the development of a high performing semi-virtual team.

Keywords: Coach, Computer-mediated communication, Email, Virtual team

1. Introduction

Teams continue to be a fundamental work unit within any organization (Nonaka 1998), yet the potential of teams seemingly remains untapped as the spread of relatively ubiquitous information technologies (e.g., e-mail) continues to increase the potential of distributed teams. This has allowed organizations to gain a competitive advantage by leveraging intellectual capital that was once unobtainable because of the geographic distribution of experts. This distribution essentially forces organizations to become more prudent about how they "invest" in "face-to-face" time (travel expenses, etc.) as well as the "virtual" time between visits that can now become more productive given the widespread adoption of information technologies. This development has allowed a competitive advantage to be gained by organizations capable of effectively combining scarce, valued, and distributed "knowledge resources" (i.e., people), thus adding to the competencies required to successfully compete within a given competitive marketplace (Stewart, 2001; 2003; Townsend, deMarie, & Hendrickson, 1998). The following study explores the boundaries of "semi-virtual" teams reliant upon relatively ubiquitous technologies by analyzing the approach of an international rowing coach operating within a semi-virtual context. We characterize the team to be semi-virtual because they relied upon both information technology and face-to-face interactions when

communicating. This case is an example of how the traditionally physically intimate relationship required by a coach and team can be "extended" to work within a semi-virtual environment that was predominantly virtual. Most alluring were competitive results that made this the most successful rowing season for this country in over a decade. Given that this was the first time the coach worked in this manner, the study is motivated by the following question: What approaches to team development was this coach able to successfully transfer to a semi-virtual context?

2. Coach as Sensegiver

Frameworks for team development (e.g., Tuckman, 1965; Gersick, 1998; Furst et al, 2003; D'Eredita, Misiolek, & Siow, in press) and leadership (e.g., Zaccaro, Rittman & Marks 2001) abound. Many more have illustrated that leadership and performance are reciprocally influential (e.g., Schein, 1992). That is, while a team may exist without a single leader, a team is requisite in applying leadership strategies and these strategies must comply with the needs of the team (D'Eredita & Heckman, 2003). The tenure of the Coach in this study was time-limited by contract. The charge of the team, and thus that of the Coach, was to help the governing rowing federation achieve world-class levels of performance. A restructuring of government sponsored programs prompted an "audit" that would result in a fair percentage of sports to be

reassigned as “recreational sports,” thus not deserving of the financial commitments of sports labeled as “high performance.” The past decade of dubious performances (i.e., one senior level, Bronze medal) put the rowing federation in a vulnerable position. Thus, the rowing federation needed results before funding decisions were to be made by the overarching Olympic committee.

These mandates worked to clearly define a number of parameters with which the Coach had to operate. The Head Coach in this case was permanently located in a country five time zones away from that of the team. The Coach was recruited because of previous success with another national rowing team. In the previous case, the Coach was permanently co-located, while in this case, the Coach was “virtual” for 75% of the time. The combination of limited access to relatively ‘basic technology’ (i.e. phone modems, home or public computers, etc.) and the inherent time difference led to the use of e-mail as the primary mode of communication. This allowed the Coach to effectively work asynchronously between prescribe onsite visits. We characterize the team to be *semi-virtual* as it relied on both virtual and face-to-face communication. The co-location of a coach for only 25% of the time is comparatively low compared to the more traditional face-to-face relationship shared by coach and athlete which often requires daily face-to-face interaction (Ericsson, 1996).

The Coach was given two seasons to produce either an Olympic qualification or a medal performance at the Under 23 World Championships. This mandated the Coach, to have an approach that was not only practical and flexible but, most importantly, *efficient*. Thus, we characterized this approach as *functional* (Zaccaro, 2002). That is, the functional leadership style of this ‘semi-virtual coach’, or the Coach’s ability ‘to get the job done’ (Zaccaro, Rittman, & Marks 2001), potentially demonstrated an approach that transcended context, purpose, and membership. Central to the notion of functional leadership is a recursive relationship between the needs of the team and leadership activities that will move the team closer to their goal. “The central premise of functional leadership

theory is that team circumstances prescribe certain necessary leadership activities for success, skills in defining what the critical leadership activities and responses are for particular team situations” (Zaccaro, 2002).

A functional leader is required to play the role of *sense-giver*. That is, the functional leader works to collectively build meaning by guiding team members to an understanding of experiences and expectations that are beneficial for the team (Zaccaro et al, 2001). The leader is viewed as necessarily shaping the team’s ability to “make sense” of the information provided in a manner that allows movement towards their goal. Zaccaro (2001) proposes that (1) leaders who develop team members’ capabilities to process information and encourage their participation in problem-solving will engage in more collective information processing than teams with leaders who use a more directive style; and (2) leaders who develop and motivate team abilities while providing appropriate performance feedback are more likely to elicit a functional understanding across the team than teams with leaders who do not display these leadership behaviours

Weick (1995) discusses seven characteristics that work to define sense-making as an explanatory process of organizing: identity construction, retrospective, enactment of sensible environments, social, ongoing, focused on and by extracted cues, and driven by plausibility rather than accuracy. Each of these involves a fundamentally *constructive* process that places individuals in a position of having to “make sense” of the context and their role in a manner that complements the group or organization (see Nilan & D’Eredita, in press, for further discussion). A more specific example of this would be Weick’s (1993) notion of collective mind composed of activities he references as representation, subordination, and contribution. Representation refers to a shared or functional understanding of “the problem” or goal. Subordination refers to a shared or functional understanding of roles within the larger collective. Contribution refers to a shared or functional understanding of contributions or actions.

Thus, it could be said that it is the functional leader's role to help the team move towards a state of collective mind by helping them to make sense of the goals, roles, and actions necessary for competitive success (D'Eredita et. al., in press).

In regard to virtual teams, Zigurs (2003) claims that leaders of virtual teams must strike a balance between flexibility and enforcement. That is, computer-mediated communication often exhibits *interpretive flexibility* (Croft, Lea, & Giordano, 1994). This parallels Weick's (1995) description about the constructive nature of meaning as events tend to be variably interpreted and reinterpreted with the passing of time. In regard to the researching of virtual teams, Paccagnella (1997) states that the focus on the quality-versus-quantity dichotomy often obscures legitimate concerns and that researchers are drawn to oversimplifying social reality and not focusing enough on "the sense and meaning of situations from the standpoint of the actor." (p4/17) We assumed the Coach to be the 'lead actor' in this study.

Our preliminary research showed that the notion of "sense-giving" was applicable in understanding this case. In the large majority of exchanges between the Coach, administrators of the rowing federation, club coaches, and athletes (i.e., not pertaining to scheduling, friendly banter, or "holiday wishes"), the Coach substantiated the role of sense-giver. In a number of instances, he used this opportunity to help the recipient of an e-mail re-construct meaning to better align with the needs of the team. Generally, the Coach initiated introductions by emailing all assistant coaches and athletes, followed with explanations of the Coach's philosophy, approach, goals and expectations, and consistently encouraged questions and feedback. Exchanges were purposefully open, allowing for discussion, even "challenges," all of which consistently reaffirming of the Coach's overarching goal: to develop an unique approach complementary to [this country's] culture and traditions. In sum, the Coach was "giving sense" to information-processing dynamics experienced by the team. Given the situational context, the Coach was able to effectively develop the team to perform at a level previously unseen by this country. These results prompted us to

further explore the actions of the Coach as sense-giver and the sense-making of the team in general.

3. Do These e-mails Make Sense?

We focused on behaviours codified within exchanged emails between the Coach, administrators, athletes, and "peripheral" participants like ex-athletes and coaches they relied upon for both insight and support. The time frame was approximately 20 months in which time 1500+ e-mails were exchanged.¹ The selection of email communication was decided based on both the uniqueness of context/purpose of the exchanges as well as the interest in analyzing leadership in the virtual or in this case, semi-virtual domain.

Patterns of exchange were noted in the context received to include: introductions; first exchanges; responses/non-responses; dyadic frequencies; deviations/changes from these patterns; and subject/purpose of each email. Multiple readings of all emails were conducted each with a distinct thread of focus (i.e. topics of conversation; patterns of email exchange; timing of interchange; issues of emphasis). Key were any shifts in an established style of communication (i.e. frequency, level of personal-ness, use of language). Also of note were the specific patterns of communication (i.e. approach, style, support, direction) utilized by the Coach, both one-to-one (Coach to individual) and one-to-many (e.g., Coach to the team) exchanges. Our exploratory analysis lead us to an understanding of the e-mails that was predominantly representative of Weick's (1993) constructive processes of Representation, Subordination, and Contribution.

3.1 Representation

Representation of 'the problem' or goal (Weick 1993) was observed through consistent mention of direction/vision, goals/mission, approach (physiometrics,

¹ Email as an electronic medium, is textual, asynchronous, often dyadic, requires "turn-taking," and in this case was conducted in two languages, the primary one being English. The second language will remain unidentified for anonymity. As emails in this second language were not translated, these particular correspondences (38 out of 1500+) were not included in this study for review.

training schedule), often illustrated by philosophical quotes, the Coach's own insights, and "transparent" explanations of the Coach's strategies (i.e., with no hidden agendas). The athletic environment made the goals relative clear and tangible. That is, unlike a number of organizational settings, athletics has a clear "finish line" and produces a clear order of finish. In this case, the team was required to achieve a specific finishing place at specific prescribed regattas (i.e., rowing competitions). How "contributive" actions were to the achievement of these goals seemed to be relatively distinct and exclusive (see below). Excerpts demonstrating Representation are as follows:

"My goal still remains the same: Olympic qualification. Team unity is critical to me right now, not some race in [place] in February. I am going with the guys I can depend on...those who are committed. Those who will stop at nothing to train together and succeed."
(Coach)

"Hi, excellent article, that means there in [country] we are not so far from the 'big' rowing countries about selection goals and methodo."(athlete) [sic]

3.2 Subordination

Subordination requires a 'shared understanding of roles within the larger collective' (Weick 1993). Sense-giving focused on clarifying roles became evident through various incidences of "testing" the Coach. One example was the Coach's effort to "re-construct" the athletes' belief that training simply meant "train, and then train harder." The Coach indirectly addressed these matters through the use of physiometrics to assess/evaluate the physical progress and capabilities of the athletes. This often included distinct periods of rest with no intensive training followed by a "test" that worked to illustrate performance improvements. These tests resulted in athletes producing "personal" as well as national records. This concept later came to become a valued and accepted team norm and worked to solidify the coach's role as "expert" trainer.

A second example involved a club coach who, in trying to curry favor with team members, emailed the Coach personally and then subsequently used those same responses from the Coach out of context. This type of testing behavior challenged the Coach as a person, as a role, and as a leader. The Coach, aware of the circumstances of this behavior, continued the use of physiometrics to objectively define which athletes showed the most progress and promise, re-explaining and re-clarifying in emails to all athletes, assistant coaches, and federation alike, a manner of sense-giving through clarification and stability of direction of focus. This club coach toned down the explicit manipulating as observed in the emails, a subtle acclimation to the non-manipulative style of this coach, the development of another team norm and reassertion of the role of Head Coach. Some excerpts that demonstrate the emphasis on subordination are as follows:

"Hi [athlete], I received your mail. No worries. Please know that I have confidence in you. You are talented and tough. Whether you fail or succeed is not important to me. Victory goes to the man with the courage to try. Races are not won on the course. Races are won inside of you. Win on your inside and you will surely succeed...in rowing and, more importantly, in life. I am with you..."
(Coach)

"Most impressive to me is [country's] willingness to 'do the right thing' and think about development." "EVERY athlete wants and deserves to taste success." "I REFUSE to let these [club] coaches deny these athletes the opportunity to find their full potential!!"
(Coach)

"Good news about the coaches! I also like to hear about the questions and interest from the athletes!! We are moving in the right direction..." (Coach)

3.3 Contribution

Contribution, or the shared understanding of contributions or actions (Weick 1993),

can be inferred from the increase in acceptance of this type of training whereby athletes who wanted consideration for the Olympics would comply with the parameters of the Coach's training program. This included maintaining perspective in handling losses as well as wins in races while still continuing to train for a higher standard of performance.

This "sense-making" by the athletes was manifested in new behavior for the team. Substantially stunning were the radically improved results in competitions such that this country had never previously experienced. Though "time and continued effort" is usually credited with such improvements, emails demonstrated it to be more than a matter of *repetitive episodes* of training and competing. This Coach's new approach was in direct opposition to past approaches that were embedded in the performance culture of this country. Veteran athletes (7+years) demonstrated the most substantial improvements (all producing personal records)

Communication between coach and athlete combined explanations and support, challenge and direction, and an open arena for feedback throughout. Short-term changes, noted in emails immediately following co-locations, occurred with less frequency, with less questions/issues, suggesting a stabilizing effect, a strong relationship component, and in effect, manifestation of less need for sense-giving. Excerpts demonstrating Contribution are as follows:

"the rowers[two names]start to spread the good news in the web sites, and what is good they say, '...We believe, let's us work...and you the candidates less talk plus more training...'" (two athletes)

"hi! its funny now everybody start change the 'Speech'. look to the page www.xxx and even the responsible start now to stay...'Let the guys work and put the system run. really we already change and start make the diference. let us keep together as a team' (federation member)

3.4 An order to development?

While not so stated by Weick and Roberts (1993), this team-forming process constructed by this coach through sense-making tactics necessarily required Representation *prior* to Subordination *prior* to Contribution. The coach accomplished these stages sequentially through sense-giving pertinent to each distinct—though not discreet—stage. That is, the majority of early e-mails were predominately Representative, focused on setting (seemingly raising) the expectations of all stakeholders. For example, given the improved performance levels and relatively young ages of the athletes involved in both goals, Olympic qualification – albeit attempted- was not to be pursued at the cost of obtaining a seemingly secured medal at the Under 23 World Championships. This honing of goals to maximize success was a lesson in strategy new to this team. E-mails overall were predominately focused on Subordination, or the roles of coaches and athletes as implementation of coaching strategies became more critical. These exchanges included clarification of "who was supposed to do what," the chain of command for resolving conflicts, and the final authority regarding weather factors or interference by the Federation. This stage of e-mails also evidenced the Coach's delegation of responsibilities to assistant coaches, defining and reinforcing their role and position on the team. E-mails eventually turned to focusing predominately on actual Contributions, or in this case, training and technique. Excel spreadsheets designed by the coach were used by the athletes to track their training in terms of "pace" of "intensity" both on and off of the water. The frequency of reference to excel sheets increased as did the level of communication concerning technical standards for what was necessary to "move the boat." The ultimate development of this group was evident by their achievements at the Under 23 World Championships (a medal in an Olympic event). Most notable, though, was that the Coach was neither on-site one month prior to nor during the training for this event. This was a task "headed" by one of the appointed assistant coaches who would "check-in" with Head Coach via phone or e-mail.

3.5 Trust

While the levels of trust between athletes and their previous/current assistant coaches is beyond the scope of this study, the development of trust among the athletes, assistant coaches, and the head coach was evident through the exchanges. Although not referenced in Weick and Robert's (1993) conceptualization of collective mind, we found it to have been established at some level in order for subsequent growth as a team through Representation, Subordination, and Contribution to occur.

It is claimed that while trust might be imported through history, contacts, and previous experiences, it is also created through communication. Examples of trust were present in the continued frequency of emails from particular members as well as with increasingly personal/vulnerable discussions of progress/capabilities of individual athletes. The Coach demonstrated interactivity through the Coach's prompt and courteous responses in conjunction with the personalized information within these responses. Balance was also maintained similarly through quick and pointed responses to incidents he deemed to have a negative impact on the mission/athletes, constantly reminding all involved that the athletes and rowing always come first.

The Coach applied all of these techniques from the beginning in the first/early emails to all athletes, assistant coaches and federation members. Emails from athletes/assistant coaches showed no confusion/discontent with this approach and corresponding explanations. On occasion these athletes would "quote" the Coach in support (e.g., "*results matter,*" "*long strokes, legs!*"). The Coach's enthusiasm was immediate and obvious, statements were explanatory and positive, personal philosophy was shared, and information meted out gradually without overwhelming the email community, thus allowing for reaction/feedback from the rowing community as well. Upon 'meeting' each participating athlete, the Coach was able to develop individualized training approaches. The Coach's frequent quotes and suggested readings, apparently intended to be meaningful and inspirational, were confirmed to be so in later emails. The "uniquely" open exchanges prompted responses from the

administration to "*reminded*" the Coach that "*this is not a democracy, but an autocracy.*"

A poignant example was the growth of a relationship between the Coach and a seemingly disillusioned veteran athlete who publicly (on web sites) announced his "retirement" and unwillingness to cooperate with any federation-led initiative because of a decade of "poor leadership." The Coach established this relationship in both face-to-face and virtual communications resulting in this athlete emerging not only becoming a leader of the team but also winning two medals in World Cup competitions within the same year (the first senior international medals won by this country in over a decade).

4. Discussion: Towards future sense-giving

This Coach, as leader and sense-giver, designed a team within the context of an email-based virtual environment; implemented changes that enhanced understanding and performance; incorporated his own personal philosophy with those of the team, provided unique guidelines for training, established norms for acceptable and productive communication and behaviours; and shared his vision of direction to coincide with steps of interventions for achieving this mission.

The experiences and knowledge of this coach in particular were primary to the contracting of this international coach to lead this national team. It was in effect a *contract for knowledge* with the predominant modes of transfer of this information being via email and co-locations. This coach entered the role of Head Coach of this national team as one of a succession of many. He had an established 'system,' gained through personal expertise and experience along with an agenda for how 'to come and get things accomplished', as Zaccaro, Rittman and Marks (2001) emphasized. The Coach's ability to obtain race results with limited resources proved the Coach to be effective as a functional leader. The Coach transferred knowledge in terms understood, accepted, and incorporated by the athletes, suggesting that "sense" was being made by team members in the manner intended.

This example of a functional leader, in the form of a coach, met Zaccaro and Klimonski's (in press) three characteristics of effective team performance. That is, team members successfully integrated their individual actions, the teams performed in a relatively complex and dynamic environments, and team effectiveness was heavily affected by the success of the leader in defining team directions and organizing maximal progress. This coach's early establishment of expecting feedback from athletes, and assistant coaches provided the constructive platform or norm necessary in laying the groundwork that early actions positively affect trust and subsequent performance (Avolio & Kahai 2003). The coach was able to play the role of sense-giver through emails, using strong communication skills, clear delineation of types of information sought, behaviours not tolerated, maintaining focus on goals and athletes, utilizing a physiometric-based program of calibration and repeating this design throughout their tenure to date. This capability of the coach to codify knowledge, allowed team members to test, practice, and willingly adopt a new program whereby the athletes could learn new techniques, yielding dramatic improvements in competitive performance.

In addition to introducing a new approach in regard to the sport, the Coach was also faced with the challenge of introducing e-mail as a medium for "coaching." General behavioural patterns specific to the introduction of e-mail as a communication medium were apparent. First, initial emails were friendly and general, allowing for the development of relationships and trustworthy exchanges. Later emails progressed to performance-focus and stayed the course despite multiple distractions, on both individual and political levels. Second, work was done to establish e-mail as a legitimate domain of communicating "business." Emphasis on "transparency" discouraged "bickering" and subterfuge. Goals and standards were quantified and communicated via an understood set of metrics (attachments with MS Excel, Word, or Power Point proved sufficient). E-mails and documents were constantly referenced during on-site visits. Third, given established communication channels, specific

questions/issues could be presented privately (i.e., one-on-one e-mails or face-to-face) and dealt with such that the entire team may be instructed for collective understanding (e.g., why rest periods are important after hard training, why races are to be carefully planned and selected, how losing is a lesson in winning). This individual focus allowed for the integrity of athletes to be supported. Team members were often addressed in regard to their specific motivations for being involved on the team. Fourth, the Coach was prompt in restating the purpose of the team in consistently providing clear direction. The Coach would provide positive feedback for the team/athlete regarding their performance progress, emphasizing the route to the next phase/level of accomplishment to be achieved (i.e. just having accomplished more than with prior coaches was not enough), and at the same time assist all members in keeping in view, the goal, the barriers and the route. Sanday concludes, "What counts in the long run is not how the facts are dressed but whether they make sense." (Sanday 1979, p537). The sensibility appeared as athletes tried out the coach's techniques, practiced and ultimately incorporated this knowledge for themselves as noted in changes/improvements in their respective individual and team performances. In time, the medium seemingly became less of a factor than the knowledge, practices and actions of team members.

Does virtual team development warrant a fundamentally different approach to leadership than the more traditional face-to-face teams? A preliminary analysis of over 100 pages of records and memos kept by this coach during on-site visits suggested that the above discussed applied to this coach's face-to-face interactions. These records showed the coach's constant emphasis on metrics as applied to ultimate goals, the focus (and concern) about how individuals were "making sense" of the information provided, the effort to "give sense" when different sense was needed, the strategies for team development, and emphasis on results. In short, the approach of this coach was consistent across both face-to-face and virtual exchanges. In this case, the coach was strategic about using each context to reinforce each another. On-site visits included relatively intense training to

test athletes solidifying training concepts discussed over e-mail. E-mail was used to “make sense” of what “just happened” (i.e., immediately following on-site visits) and to prepare athletes for upcoming on-site visits. This supports the functional approach used by this coach in being necessarily flexible and strategically anticipative in approach, and – most pertinent- the style and method of communication.

5. Conclusion

The aim of this study was to gain insight into effective development of semi-virtual teams through an exploratory study of a successful coach operating within a semi-virtual context. Knowledge was shared primarily via a virtual environment, achieving success as measured by excelled levels of performance previously unseen by this national rowing team. Characterizing the role of the coach to be that of ‘sense-giver’, we explored what the coach was hoping to “give sense to” and how this was accomplished. Our initial exploratory analysis suggested that Weick and Robert’s (1993) notion of collective mind was applicable in the coach’s attendance to the critical actions of Representation, Subordination, and Contribution. Further, we found evidence that suggests that emphasis on each of these progressed in an ordered manner as listed above.

Considering that all virtual/semi-virtual teams are unique in circumstance, it is suggested that there are *universal* sense-making applications of the above mentioned leadership strategies for positive performance in purely virtual, pure face-to-face, or semi-virtual settings. While the applicability of these findings is strictly based on the assumption that fundamental behaviours addressed above are common across most semi-virtual team-building scenarios, no evidence in this regard has been provided.

Suggestions for further research include: comparative case studies with other virtual coaching/e-leadership situations; studying parallel ‘hybrid’ contexts not related to coaching involving both the virtual and the physical team/group setting; and instrumental case studies comparing IT platforms (i.e. web/video formats). We also view further data collection as being

potentially useful for the development of ‘Virtual Coaching’ (web-based) software that could be used across an array of organizational contexts.

References

- Avolio, B. & Kahai, S. (2003) Adding the ‘E’ to E-Leadership: How it May Impact Your Leadership, *Organizational Dynamics*, Vol. 31, No. 4, pp325-338.
- Avolio, B., Kahai, S. & Dodge, G. (2000) E-Leadership: Implications for Theory, Research, and Practice, *The Leadership Quarterly*, Vol.11, No. 4, pp615-668.
- Croft, R., Lea, M. & Giordano, R. (1994) The Social Construction of Computer Use: Stories from the ‘Real World’, Howard & Leung, *Proceedings of the Annual Conference of the Computer-Human Interface special Interest Group of the Ergonomics Society of Australia*, pp33-38.
- D’Eredita, M. A., and Heckman, R. (2003). Leveraging emergent leadership in asynchronous environments to improve learning. Presentation given at The Ninth Sloan-C International Conference on Asynchronous Learning Networks (ALN). Orlando, Florida.
- D’Eredita, M. A., Misiolek, N., and Siow, J. (forthcoming). Organizing a Virtual Collective Mind: Shifting Attention from Proximity to the Actions and Fundamental Needs of Virtual Teams. *Proceeding of the 5th Hawaii International Conference on Business*.
- Ericsson, A. K. (Ed.) 1996. *The Road to Excellence: The Acquisition of Expert Performance in the Arts and Sciences, Sports, and Games*. Lawrence Erlbaum Associates, Mahwah, New Jersey.
- Nilan, M. and D’Eredita, M. (in press). Organizations as virtual communities: a sense-making approach for uniting knowledge consumers and knowledge workers. *International Journal of Web Based Communities*.
- Furst, S.A., Reeves, M., Rosen, B., & Blackburn, R.S. (2003). Managing the life cycle of virtual teams. Paper presented at the 2003 Annual Meeting of the Academy of Management, Seattle, August 1-6.

- Gersick, C.J.G. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal*, 31(1), 9-41.
- Paccagnella, L. (1997) "Getting the Seats of Your Pants Dirty: Strategies for Ethnographic Research on Virtual Communities", *Journal of Computer Mediated Communication*, Vol. 3, No. 1, pp17.
- Sanday, Peggy R. (1979) The Ethnographic Paradigm(s), *Administrative Science Quarterly*, Vol. 24, No. 4, pp.527-538
- Schein, E. H. (1992) *Organizational Culture and Leadership*. 2d San Francisco, CA: Jossey Bass.
- Stewart, T. A. (2001). *The Wealth of Knowledge: Intellectual Capital and the Twenty-first Century Organization*. New York, NY: Doubleday.
- Stewart, T. A. (2003). Does IT matter? an HBR debate: introduction. *Harvard Business Review*, June, pg. 1.
- Townsend, A. M., deMarie, S. M., and Hendrickson, A. R. (1998). Virtual teams and the workplace of the future. *Academy of Management Executive*, 12, 3, pp 17-29.
- Tuckman, B. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63, pp. 384-399.
- Weick, Karl. *Sense-making in organizations*. (1995) Sage Publications. Beverly Hills, CA.
- Weick, K. and Roberts, K. (1993). Collective mind in organizations: Heedful Interrelating on flight decks. *Administrative Science Quarterly*. Vol. 38, no. 3; pp 357-381.
- Zacarro, S.J. (2002) Organizational Leadership and Social Intelligence In: Riggio, R. Editor, (2002) *Multiple Intelligences and Leadership*. Lawrence Erlbaum.
- Zacarro, S.J. & Klomoski, R. (in press). The Interface of Leadership and Team Processes, *Group and Organization Management*. Special Issue.
- Zacarro, S., Rittman, A., & Marks, M.. (2001) Team Leadership, *The Leadership Quarterly*, Winter, Vol. 12, No. 4, pp.451-483.
- Zigurs, I. Leadership in Virtual Teams: Oxymoron or Opportunity? (2003). *Organizational Dynamics*, Vol. 31, No. 4, pp339-351.

