

Ushus-Journal of Business Management
2017, Vol. 16, No. 2, 13-30
ISSN 0975-3311 | [https://doi: 10.12725/ujbm.39.2](https://doi.org/10.12725/ujbm.39.2)

Getting Things Done, Virtually! - The Role of Virtual Team Leadership in Virtual Team Effectiveness

Jude Ashmi E*

Abstract

A virtual team's success depends on the team's effectiveness. Accomplishing such a team's effectiveness is far more difficult when compared with traditional work teams. This article is a result of an exploratory study of the role of leadership in virtual teams. Virtual teams' leadership is seemingly situational and supervisory, depending on the task. This study reveals that (1) individual virtual team members act as leaders based on the specific requirements for getting things done, (2) classifies virtual team leadership under supervisory and facilitating leadership, (3) suggests that both leadership roles are essential for virtual team effectiveness and functioning and (4) recommends exploration of leadership-oriented communication competency, shared understanding and virtual team citizenship behaviour as these are required for the effective performance of a virtual team.

Keywords: Virtual team, Leadership, Team effectiveness, Communication competency, Virtual team citizenship behaviour, shared understanding, Supervisor, Facilitation

* Institute of Management, Christ University, Bangalore, India;
jude.ashmi@res.christuniversity.in

Introduction

Effective leadership is a critical component for team effectiveness. Especially in a scenario where global virtual teams are growing, and ICT (information and communication technology) is their only means of communication. The team performance depends on the nature of communication and the leadership involved. Winning virtual teams assess, evaluate and change periodically to improve their team effectiveness (Blackburn, Furst and Rosen, 2003). That this is true despite the and short and temporary life of the teams, elucidates the importance of virtual team effectiveness from an organisational perspective. An organization can build a winning team through great leaders and skilled employees (Mary Shapiro, 2015). There is no foolproof method to achieve the fullest potential of the team. However, a great leader's knowledge, skills and abilities help identify the teams' potential and thereby direct its members go up the ladder.

The objective of this article is to define the role and nature of virtual team leadership. There is a myth that virtual team leadership tasks are executed on a rotational basis. This article would bring greater clarity on this viewpoint and thereby resolve the myth. (Powell, Piccoli & Ives, 2004, Baral Bhargav, 2010, Chidambaram & Bostorm,1994)

The article first explores literature on virtual teams' global scenario - the knowledge, skills and abilities (KSA) that enable a team member to contribute to team effectiveness as well as the role of a virtual team leader in virtual teams. Secondly, the qualitative interviews outline the various KSAs of virtual team leadership, as practised in the industry. Finally, a discussion on the KSA of leaders to build an effective virtual team based on both the inputs (literature and interviews). This leads to the finding, which is the classification of leadership. The conclusion, implication and future research suggestions follow the findings.

Virtual teams'- The global scenario

A virtual team with geographically dispersed team members depends on electronic and computer-mediated communication for carrying out their task processes. The lack of face-to-face interaction increases the demand for timely communication, collaboration and supervisory support in varying degrees (Ashmi and Arti, 2016). Virtual trust is a basic requirement for good virtual team outcomes (Ashmi and Arti, 2015). The outcome of virtual teams is measured to track the team's improvement and lag (Cohen and Gibson, 2003). Virtual teams are classified on a varied basis including geographical distance, task and process and the ICT used (Ebrahim, Ahmed and Taha, 2009, Martins et al. , 2004, Bell and Kozlowski, 2002). Self- managed virtual teams alone do not have an appointed supervisor, they lead, track and support each other.

Virtual teams are found to support organisations with more flexibility and responsiveness. However, they have varied needs in domains ranging from communication to satisfaction (Powell, Piccoli and Ives, 2004). The process involved in any work team starts with the input of team members and goes through the process in two ways –the socio-emotional process and task process allowing to a measurable output (Saunders, 2000). Leadership is both socio-emotional and task-oriented in virtual teams. Trust and leadership play the main role in achieving virtual team effectiveness (Ramesh and Dennis, 2002, Zakaria, Amelinckx and Wilemon, 2004). Communication processes enable trust among the team members and social relationships in virtual teams enable trust and strong leadership (Jarvenpaa and Leidner, 1999).

Virtual Team Effectiveness

The concept of virtual teams enables the best talent utilisation with a diverse workforce to accomplish effective performance (Cohen and Gibson, 2003, Maznevski & Chudoba, 2000). Building an effective team is the foundation of achieving team effectiveness. Therefore, bringing together competent individuals for relevant tasks makes the overall progress of the team easier (Mary Shapiro, 2015). Sharing of knowledge and mutual trust between individuals, as well as fostering collective trust among the group members are

the main ways of enabling effective team performance (Maznevski, 1994). This trust arises through the social relationship of team members, which is enabled by communication effectiveness. (Jarvenpaa et al., Jarvenpaa & Leidner, 1999, Kayworth & Leidner, 2000, Ashmi & Arti, 2016).

Self-managed teams often accomplish goals through team collaboration. This is brought about by effective communication and supervisory support in global virtual teams (Ashmi & Arti, 2015). Low performance in virtual teams was analysed and communication barriers in 12 different forms were found to be responsible for low performance (Prathiba & Mathew, 2013), highlighting the importance of virtual team communication. Trust and effective leadership directly influence the performance of the virtual team (Zakaria, Amelinckx and Wilemon, 2004). Task interdependence constitutes the technical character of a virtual team. The attention of a team leader towards technical characters along with cultural discrepancies, communication and language barriers is claimed as a requisite for virtual team effectiveness (Line, Dube & Guy Pare, 2004). Communication competence, clear interpersonal understanding and team member relationships were directly found to influence the team effectiveness (Badrinarayanan & Dennis, 2008). Motivation, trust, comfort and cohesion were found to have a significant impact on the team's performance with all these reflected as individual behaviours of the virtual team members. The strong influence of individuals and their organisational involvement had a serious impact on team effectiveness (Sridhar et al., 2007).

Virtual Team Leadership

The leaders in virtual teams undertake various behavioural changes based on the type of virtual team (Potter & Balthazard, 2002). They are classified into types based on various categories including geographic, cultural, task-oriented, dependency oriented and matrix based (Bell & Kozlowski, 2002, Pauleen & Yoong, 2002). Therefore, the typology of virtual teams has a database of extensive experimental research studies which determine that communication behaviour is the key to success. Among members,

trust developed, social relationships formed, timely information sharing, group identity developed as well as (Cohen and Gibson, 2003), collaboration and cohesion towards the team goal and the responsible behaviour and commitment of the individual, referred to as benevolence (Zakaria, Amelinckx & Wilemon, 2004), are the prime ingredients of a virtual team's effectiveness.

The factors mentioned above regarding effectiveness of a virtual team are integrated and executed by the virtual team leader. The multiple tasks are undertaken by the supervisor or leader subsequently addresses the conflicts that arise among team members. Thus capacity building and task enabling are the responsibilities of the supervisor (Bell & Kozlowski, 2002, Pauleen & Yoong, 2001).

Leadership is understood as supporting the team members in creating a shared understanding (Hinds & Weisband, 2003, Cohen & Gibson, 2003) in order to accomplish tasks and supervising with experiential knowledge till the dependent task is accomplished. Hence the role of leadership claimed to be rotational.

Both the supervisory function and facilitating function including socio-emotional support and task-oriented support are recognised as leadership in research. Situational leadership out of team benevolence is understood as rotation of leadership roles among team members (Jarvenpaa & Leidner, 1999, Chidambaram & Bostorm, 1993, Ramesh & Dennis, 2002).

It becomes possible to accomplish the task when there is an overlap in thinking among the team members (Hinds & Weisband, 2003). The team members' beliefs, perceptions and expectations regarding the goal accomplishment process should be the same, indicating shared understanding. This process creates a self-responsible contribution intention in the team which is claimed as benevolence (Bell & Kozlowski, 2002). Both benevolence and shared understanding are the shared responsibility of the team members and the responsibility of the supervisor or team head. The communication potential of the supervisor inspires and motivates the team members towards facilitation of group action.

The knowledge, skill and ability including the communication and integration potential of the leader is an essential requirement of a virtual team(Powell, Piccoli & Ives,2004).

Qualitative Inputs

The samples were selected from IT-based virtual teams from renowned organisations. Members of seven teams with varying degrees of virtualness were informally interviewed, lending believability to their responses. Their views were largely similar and they were interviewed on the process and other encounters while consciously avoiding the words: leader and leadership. The interview mode was ICT-aided video conferencing and personal social media chat, depending on the convenience of the virtual team members. This was also supplemented with virtual communication encounters to understand the team basics. Below are some worthy responses that were spontaneous.

- “...But speaking about, whom I report to.... It is my team manager... but work-related orders we receive it from both ends: the development and the test team manager. We juggle the tasks based on timeline priorities. But the team managers have a good understanding ofthemselves; all team members help equally...”
- “Every mail is cc-ed to the team members, so all of us know what is going on in the team, we intervene for sensible reasons, and conflict resolving is part of the work... it is not about seniority and superiority when it comes to conflict resolution, it is the information and experience that counts...”
- “We never miss out on the status reports...so that we will know who needs a push or support so that we/others board on time...or else our task faces the lag...”
- “Support, yeah, any kind of support sometimes counselling for clarity of task, sometimes emotional support, after conflicts, coz you have to keep it going, you can’t let them stop or lag it has to go on, it is all time-bound, right?!”

- “It is a ‘task’ when you are in virtual development, you need more commitment, people are waiting to work on your work, I mean what you develop...? Your co-developers need reminders too, sometimes sharing your time lag experience in a similar task enables concrete work.”
- “bringing all team members together at the same time is not possible, but we support others with information, we don’t wait for them, we reach out without hesitation, they know the importance of the action.... because we all know the target and time...none of us prefer a delay.”
- “We need to stay tuned always, we don’t have a choice either. Be it your work or someone’s...if you are not aware, they hesitate to entrust responsibilities on you, none of them is satisfied. You need to be aware of everything around you or else the supervisor puts you on track, but you have to do twice the run....to catch up...”
- “...dependent tasks get you on toes, you have to make calls by yourselves and follow to get it done. Otherwise, time lag issues come up...and the consequence is a chain of reaction for every member...”
- “None of us prefers a crisis moment, already the physical stake of the team is a question, so we are ready and committed always, we volunteer action and information...to keep the flow going...”....“We don’t want to give up without efforts.”
- “Getting things done is not easy that too virtually, we often ensure we are on track...and commonly share the status reports, to keep the members committed to responsibility....nobody asks for the report, we do it ourselves so that others define their speed ...”

After analysis of the literature inputs, it was found that the above conversations emphasized the following factors: communication competency, shared understanding, facilitation support and supervisory support. Supervisory support is confirmed by the note of receiving work directions and orders. Facilitation is confirmed by the notes on knowledge, proactive, counselling support,

perseverance, dependent tasks and benevolent self-responsible behaviour of the team members. The factors mentioned above were found relevant to the keywords conveyed by the team members.

Following table illustrates the keywords and relevance.

Table 1 Leadership factors and keywords identified from the qualitative input.

Factors	Keywords
Communication	Copy of mails, Intervening, clarification
Competency	
Shared Understanding	Understanding between members, Awareness of task direction, Understanding among managers
Leadership	Work direction, Inspiring acts of volunteering, Motivation including counselling, Avoiding hesitation to clarify, Seeking help
Supervisory Support	Work orders, Direction for dependent tasks, Tracking status of tasks, Timeline understanding with managers, Crisis management with team members
Facilitation by Mutual Support	Intervention, Sharing experience to prevent time delays, Preventing delay of dependent tasks
Facilitation by Knowledge	Information and experience sharing, Awareness of the current task, Awareness of timeline priorities
Facilitation by Proactiveness	Intervening, Volunteering based on knowledge and outcome
Facilitation by Benevolence	Self-responsibility, Preventing accomplishment delays, Self-tracking based on status reports
Facilitation by Dependence	Interdependence proactiveness, Task motivation to prevent time delays
Facilitation by Trust	All conversations focus on team accomplishment, expecting others to trust, trusting team member intentions and shared understanding.
Facilitation by Perseverance	Crisis Management, Dependency discussion and Task/ goal accomplishment motivation.

Analysis

The literature input highlights various dimensions of leadership. The qualitative input highlights some of those dimensions among which communication competency, shared understanding and leadership combine to yield virtual team effectiveness.

Thus, leadership is multifaceted in virtual teams. The similarity with regard to the leadership role seems to be the same when compared to traditional work teams, but it is a shared responsibility of multiple team members in case of a virtual team. The single-handed responsibility with multiple dimensions professes only the communication competency of the leader, in terms of traditional teams. But in virtual teams, other than to create the idea of 'teams' or benevolence, every other dimension is a shared responsibility of the team.

The recent leadership scale covers most of the dimensions identified as leadership competence factors from the qualitative inputs (Aaron, Ehrhart and Farahnak, 2014). Their scale measures leadership in terms of the following factors:

Proactiveness, Knowledge, Support and Perseverance which add up to implementing leadership. The qualitative inputs obtained appear to be practical and relevant to the scale.

The distance among the team members requires facilitation among the members in cases of task dependence. The immediate previous-task and post-task actions create immense benevolent support from the task holder in-terms of information sharing, timeliness, trust and communication response. The experiential input and information alerts are a significant part of creating the shared understanding. The co-team member acts as a leader or a facilitating support, inspiring and motivating the team toward the accomplishment of the task.

Analysis of the literature input and qualitative input together yields clarity on the role of leadership in virtual teams, confirming the fact that responsibility is not on a rotational basis but instead on a shared basis. Shared understanding with good communication

competency enables maximum team effectiveness through shared responsibility and leadership.

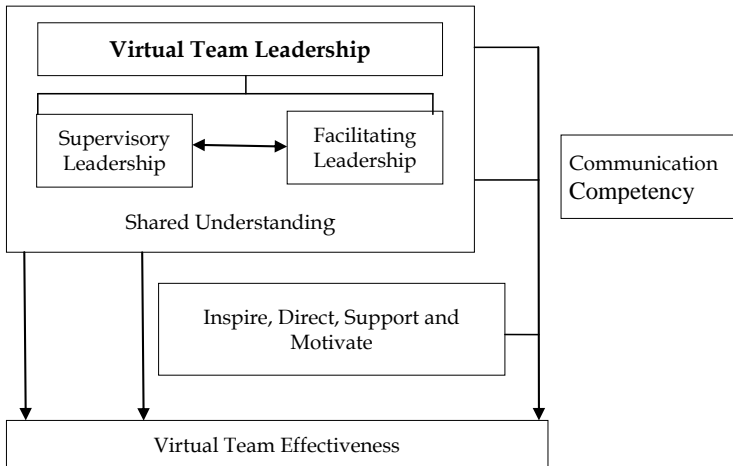


Fig1 – Requisites of Virtual Team effectiveness

The literature reviewed and the research conducted, till date, confirms relatively less exploration of virtual team leadership. The research findings strongly confirm the influence of virtual team leadership on team performance. Many significant studies confirm virtual team leadership as the main driving factor for virtual team effectiveness. Virtual team leadership is often on a rotational basis and therefore there is no single, constant leader. This ambiguous interpretation on virtual team leadership projects virtual teams as being directionless. This, in turn, creates a low team performance expectation.

Findings

This exploratory study resolves the ambiguity on the role of virtual team leadership within virtual teams.

Qualitative interviews and literature reviewed support the fact that, even virtual teams function with a vision. This vision, if clearly understood by the team members, allows their task execution to remain focused. In this manner, goal achievement and

individual performance would be guaranteed. Conveying the vision and directing the team towards its best potential performance is the sole responsibility of the leader, regardless of the nature of the team.

A close observation of the hierarchical structure of the virtual team confirms the fact that leadership in a virtual team is multifaceted. The concept of shared understanding is the vital force that enables the smooth functioning of the virtual team. Based on this, the research identified that two types of leadership underly the virtual team's performance. They are:

- Supervisory leadership
- Facilitating leadership

Both leadership roles are essential for virtual teams to reach their potential. The team would be able to perform effectively through the existence of a shared understanding among the individual members. Social and professional relationships play an important role here in order to ensure a shared understanding of communication requirements. This is because different individuals with different personality types require varied communication patterns and mediums.

Supervisory Leadership is the role played by the officially appointed supervisor who monitors, governs, and tracks the team's direction and work speed. The supervisor is the individual team member who is assigned the responsibility of tracking the team's performance. The entire team reports to the supervisor. The supervisor tracks the direction of work, enables the shared understanding of the team members, and enables the required social relationship and trust within the team. The supervisor's responsibility is to strategize team performance towards the desired vision. Hence, the Supervisor evaluates and controls the team members as and when required, along with taking into account inputs from the team members. Resource allocation from external sources and budget monitoring of the resources, the orientation of task process, maintaining the team spirit to increase motivation and perseverance through virtuality are the priorities of

the supervisor. The expectation of the team members from the supervisor may range from support on an individual basis to fostering of team relationships. This support includes the facilitation process, inspiration, motivation and counselling at risky moments to enable perseverance. The supervisory leadership is assigned not on job rotation basis, though the leader may play multiple roles to execute the task which falls under his/her responsibility and profile. This role becomes rotational only in case of self-managed virtual teams where responsibility requires adaptation and juggling of tasks.

Facilitating leadership is the role played by any of the team members on a rotational basis. It is generally based on the task goals of the virtual team. The team member who needs knowledge, information, assistance or collaboration initiates the process through communicating proactively. Such a request raised or demanded depends on the direction and dependability. Handling a task, co-processing of tasks and mutual contribution for the accomplishment of the same task are the general reasons for the team member facilitating leadership. The team member who facilitates leadership moves on ahead with the task. The reason could be knowledge and information required, standing united to face an unexpected complication in task due to external forces, perseverance and crisis management as well as lending support and being proactive. The mode of communication and resolving communication issues are also part of team member facilitation. The core target is the accomplishment of the task through the efficient use of available resources. The supervisor addresses issues rising with regard to knowledge, skill and time-based dependability, sequence and barrier issues, communication issues related to medium of communication, language and culture during the facilitation process. Shared understanding eliminates the misunderstanding and misconceptions during the process of facilitation. However, crisis moments are supported by the facilitator and the supervisor, supporting the claim that both the roles are invaluable in virtual teams technically.

The perfect balance struck by the supervisor and facilitator is the key to a successful team performance. Team collaboration is an integral part of the virtual team effectiveness. The necessity of striking this balance constitutes the shared understanding. Shared understanding among the entire team is essential, but a mutual understanding between the facilitator and the leader is of major importance, in order to achieve efficient and effective team performance. The facilitator is not an individual as the role is played by random team members based on requirement and time. Hence it is obvious that there needs to be a good social and task-oriented relationship among the team members and with the supervisor. This relationship focuses on defining the mode, pattern and frequency of communication that is necessary for effective functioning of the team. This relationship also satisfies the complex need for communication, as the communication competence of each individual is different from other.

A Supervisory leader can act as a facilitating leader, but the facilitating leaders cannot supervise the entire team without the consent of the supervisory leader. The area of leadership is limited to a facilitating leader as individual task dependence demands attention. Facilitating leadership is a choice out of benevolence and task dependence, but supervisory leadership is not. The findings of the study are presented below:

Table 2 The findings in a Nutshell

-
1. Virtual team leadership is classified into two types: Supervisory leadership and Facilitating leadership
 2. Communication competence and shared understanding among the team members are equally important as that of the leader.
 3. Facilitating leadership functions are understood as the shared responsibility of the team members
 4. Benevolence, Self-responsibility, Facilitation and Volunteering attitudes are self-disciplining behaviours of the team members that come under the purview of as Virtual Team Citizenship Behaviour, similar to organizational citizenship behaviour.
 5. A Supervisory leader can act as a facilitating leader, but the facilitating leaders cannot supervise the entire team without the consent of the supervisory leader.
-

-
6. The scope of leadership is limited to a facilitating leader as individual tasks assigned for the facilitator demand attention.
 7. Facilitating leadership is a choice out of benevolence and task dependence, but supervisory leadership is not.
-

Implications

The supervisory leadership and facilitating leadership have one thing in common- the vision and goal of the virtual team. The focus of the task and the proactive self-management initiative explicitly proclaim the responsible attitude and commitment of the team member towards the task. This enables proactive and continuous leadership within every member of the team. This concept is similar to the citizenship behaviour of individuals, leading to the term 'virtual team citizenship behaviour'.

The significant impact of organizational citizenship behaviour on team effectiveness and organisational effectiveness has been widely discussed in the past. Hence shared understanding, communication competence and leadership competence of the team members are the vital driving forces of team effectiveness.

Conclusion

The major finding of the study identifies classified roles of leadership in the virtual team as supervisory and facilitating. The functions of both the roles help in task accomplishment if communication competency and shared understanding of the team members foster it. The core objective of the paper was to explore virtual team leadership which aids in identifying the importance of tasks as well as concept clarity. Further, the self-responsible behaviour of the team members aided the identification of the surviving virtual citizenship behaviour among the virtual team members. The presence of supervisory support in virtual teams is confirmed by the classification of leadership types. The myth of the role of virtual team leaders is clarified through the elucidation of the importance and functions of both supervisory leaders and facilitating leaders. The importance of sharing knowledge through

shared leadership with the use of appropriate communication modes and patterns, and overcoming timeline barriers are proven with evidence via a literature review. The classification of leadership based on the interpretation of the given literature delivers a perfect picture.

Knowing the requirements of an effective virtual team is an important requisite for the building of a virtual team. This exploratory study has yielded the desired result of shedding light on the essentials. Future studies on competency requirements of a virtual team leader and exploratory studies on virtual team citizenship behaviour in comparison with traditional organizational citizenship behaviour would contribute toward increasing the effectiveness of team performances in virtual teams and virtual organizations. Research on shared understanding and the essentials of shared understanding would help virtual teams to overcome communication barriers within the team.

References

- Aarons, G. A., Ehrhart, M. G., & Farahnak, L. R. (2014). The implementation leadership scale (ILS): development of a brief measure of unit level implementation leadership. *Implementation Science*, 9 (1), 45.
- Ahmad, T., Farrukh, F., & Nazir, S. (2015). Capacity building boost employees performance. *Industrial and Commercial Training*, 47(2), 61-66. <http://dx.doi.org/10.1108/ICT-05-2014-0036>
- Badrinarayanan, V., & Arnett, D. B. (2008). Effective virtual new product development teams: an integrated framework. *Journal of Business & Industrial Marketing*, 23(4), 242-248. <http://dx.doi.org/10.1108/08858620810865816>
- Baral, R., & Bhargava, S. (2010). Work-family enrichment as a mediator between organizational interventions for work-life balance and job outcomes. *Journal of Managerial Psychology*, 25(3), 274-300.
- Bell, B. S., & Kozlowski, S. W. (2002). A typology of virtual teams implications for effective leadership. *Group & Organization Management*, 27 (1), 14-49. <http://dx.doi.org/10.1177/1059601102027001003>
- Bjørn, P. and Hertzum, M. (2006). Project-based Collaborative Learning: Negotiating Leadership and Commitment in Virtual Teams. *5th Conference on Human-Computer Interaction in Southern Africa*. 6-15. Cape Town, South Africa: Greunen D.V.

- Carte, T. A., Chidambaram, L., & Becker, A. (2006). Emergent leadership in self-managed virtual teams. *Group Decision and Negotiation*, 15(4), 323-343. <https://link.springer.com/article/10.1007/s10726-006-9045-7>
- Earnhardt, M. P. (2009). Identifying the Key Factors in the Effectiveness and Failure of Virtual Teams. *Leadership Advance Online*, N/A (XVI). Retrieved from <http://commons.erau.edu/publication/64>
- Ebrahim, N. A., Ahmed, S., & Taha, Z. (2009, December). SMEs and Virtual R&D Teams: A Motive Channel for Relationship between SMEs. In *Technical Postgraduates (TECHPOS), 2009 International Conference for* (pp. 1-7). IEEE. <http://dx.doi.org/10.1109/TECHPOS.2009.5412112>
- Furst, S., Blackburn, R., and Rosen, B. (1999). Virtual team effectiveness: A proposed research agenda. *Information Systems Journal*, 9(4), 249-269. <http://onlinelibrary.wiley.com/doi/10.1046/j.1365-2575.1999.00064.x/abstract>
- Gibson, C. B., & Cohen, S. G. (Eds.). (2003). *Virtual teams that work: Creating conditions for virtual team effectiveness*. John Wiley & Sons. San Francisco, CA
- Hambley, L. A., O'Neill, T. A., & Kline, T. J. (2007). Virtual team leadership: The effects of leadership style and communication medium on team interaction styles and outcomes. *Organizational behavior and human decision processes*, 103(1), 1-20. <https://doi.org/10.1016/j.obhdp.2006.09.004>
- Hambley, L. A., O'Neill, T. A., & Kline, T. J. (2009). Virtual team leadership: Perspectives from the field. *International Journal of e-collaboration*.
- Hoch, J. E., & Kozlowski, S. W. (2014). Leading virtual teams: Hierarchical leadership, structural supports, and shared team leadership. *Journal of applied psychology*, 99(3), 390. <http://psycnet.apa.org/doi/10.1037/a0030264>
- Holton, J. A. (2001). Building trust and collaboration in a virtual team. *Team performance management: an international journal*, 7(3/4), 36-47. <https://doi.org/10.1108/13527590110395621>
- Jarvenpaa, S. L., & Leidner, D. E. (1999). Communication and trust in global virtual teams. *Organization Science*, 10 (6), 791-815. doi: 10.1111/j.1083-6101.1998.tb00080.x
- Jarvenpaa, S., Knoll, K. and Leidner, D. (1998). "Is Anybody Out There? Antecedents of Trust in Global Virtual Teams," *Journal of Management Information Systems*, 14(4), 29-64. <http://dx.doi.org/10.1080/07421222.1998.11518185>
- Jude Ashmi E, Arti Arun Kumar (2015, December). "Well done! Virtual Team!". Paper presented at the meeting of the IMRA-IIMB International Conference at Indian Institute of Management Bangalore, Bengaluru, India, Organized by IIMB, Bengaluru.
- Jude Ashmi E, Arti Arun Kumar (2015, March). 'Communication medium and Virtual Team Communication Competence.' Paper presented at the

- meeting of the International Conference on Transforming Emerging Economies through Sustainability and Innovations in Business at Institute of Management, Christ University, Bengaluru, India.
- Jude Ashmi E, Dr Arti Arun Kumar (2016). "Trust: A 'Must' for Virtual Team Effectiveness" A Literature Review on the Role of Trust in Virtual Team Effectiveness. *NavaJyoti, International Journal of Multi-Disciplinary Research*, Vol-1, Issue-1.
- Kayworth, T. and Leidner, D. (2000). "The Global Virtual Manager: A Prescription for Success," *European Management Journal*, 18(2), 183-194.
- Kayworth, T. R., & Leidner, D. E. (2002). Leadership effectiveness in global virtual teams. *Journal of management information systems*, 18(3), 7-40. <http://dx.doi.org/10.1080/07421222.2002.11045697>
- Kayworth, T. R., & Leidner, D. E. (2002). Leadership effectiveness in global virtual teams. *Journal of Management Information Systems*, 18(3), 7-40. doi: 10.1080/07421222.2002.11045697
- Martins, L. L., Gilson, L. L., & Maynard, M. T. (2004). Virtual teams: What do we know and where do we go from here?. *Journal of management*, 30(6), 805-835. doi/abs/10.1016/j.jm.2004.05.002
- Maznevski, M. L., and Chudoba, K. M. (2000). Bridging space over time: Global virtual team dynamics and effectiveness. *Organization science*, 11(5), 473-492. <http://dx.doi.org/10.1287/orsc.11.5.473.15200>
- Pauleen, D. J. (2003). An inductively derived model of leader-initiated relationship building with virtual team members. *Journal of Management Information Systems*, 20(3), 227-256 <http://dx.doi.org/10.1080/07421222.2003.11045771>
- Pauleen, D. J. (2003). Leadership in a global virtual team: An action learning approach. *Leadership & Organization Development Journal*, 24 (3), 153-162. <https://doi.org/10.1108/01437730310469570>
- Pauleen, D. J., & Yoong, P. (2001). Facilitating virtual team relationships via Internet and conventional communication channels. *Internet Research*, 11(3), 190-202. <https://doi.org/10.1108/10662240110396450>
- Pauleen, D. J., & Yoong, P. (2001). Relationship building and the use of ICT in boundary-crossing virtual teams: a facilitator's perspective. *Journal of Information Technology*, 16(4), 205-220. doi/abs/10.1080/02683960110100391
- Pauleen, D. J., Corbitt, B., & Yoong, P. (2007). Discovering and articulating what is not yet known: Using action learning and grounded theory as a knowledge management strategy. *The Learning Organization*, 14(3), 222-240. <https://doi.org/10.1108/09696470710739408>
- Piccoli, G., Powell, A., and Ives, B. (2004). Virtual teams: team control structure, work processes, and team effectiveness. *Information Technology and People*, 17 (4), 359-379. <http://dx.doi.org/10.1108/09593840410570258>

- Potter, R. E., & Balthazard, P. A. (2002). Virtual team interaction styles: Assessment and effects. *International Journal of Human-Computer Studies*, 56(4), 423-443. <https://doi.org/10.1006/ijhc.2002.1001>
- Powell, A., Piccoli, G., and Ives, B. (2004). Virtual teams: a review of current literature and directions for future research. *ACM Sigmis Database*, 35(1), 6-36. <http://dx.doi.org/10.1145/968464.968467>
- Pratibha, Mathew (2013). Employee Challenges and its Solutions in Virtual Information Technology Industry. *Research Thesis, Christ University, Bengaluru*. Retrieved from [http:// repository.christuniversity.in/4968/](http://repository.christuniversity.in/4968/)
- Purdue, O. W. L. (2010). APA Formatting and Style Guide.
- Sridhar, V., Nath, D., Paul, R., & Kapur, K. (2007, July). Analyzing factors that affect performance of global virtual teams. In *Second International Conference on Management of Globally Distributed Work* (pp. 159-169). Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.105.1596&rep=rep1&type=pdf>
- Zakaria, N., Amelinckx, A., and Wilemon, D. (2004). Working together apart? Building a knowledge-sharing culture for global virtual teams. *Creativity and innovation management*, 13(1), 15-29. doi: 10.1111/j.1467-8691.2004.00290.x
- Zhang, S., & Fjermestad, J. (2006). Bridging the gap between traditional leadership theories and virtual team leadership. *International Journal of Technology, Policy and Management*, 6(3), 274-291. <https://doi.org/10.1504/IJTPM.2006.011253>