

Leadership Effectiveness for Professional Growth of Virtual Teams in the Software Industry: The Case of Pakistan

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Abstract

The software industry is a multi-billion industry and millions of people associated with this business. The beauty of this industry is it requires minimal infrastructure and special equipment which include software and hardware to run the business. Virtual working environment and practices originated in the 1980s with the birth of the internet. Virtual teams or individuals work online with mutual agreement and defined objectives. There are a lot of challenges which the leadership faces while dealing with virtual teams. These challenges include the availability of high-quality internet connection, diminished focus and productivity, management of employees virtually and their accountability, task management, maintaining a smooth and well-disciplined relationship with all team members, keeping the morale high of a virtual team, and security of assets (hardware, software, and data). Therefore, leadership must transform their way of management. Shared leadership style provides the distribution of powers and roles, which help to increase productivity and performance. The country like Pakistan where internet connection and availability of copyrighted software & pre-requisite hardware are few of the major challenges, leadership may face different challenges as compared to virtual teams operating in different countries. This study will try to identify the challenges which leadership may face while functioning with virtual teams in Pakistan, and the effect of shared leadership if applied on productivity and efficiency to meet the organizational objectives.

Introduction

Shared leadership occurs when two or more members engage in the leadership of a team to influence and direct fellow members to maximize team effectiveness. The early roots of shared leadership be early as the Roman Empire, whereby a group of individuals shared power through the Senate. However, the concept of sharing power and influence among several individuals emerged through organizational efforts to manage individuals in teams and through a focus on self-leadership whereby individuals 'lead others to lead themselves'. It is important to distinguish shared leadership from team leadership because shared leadership describes how team members influence each other and share responsibility for tasks, rather than the concept of a team being led by a specific leader. Shared leadership occurs when a group of individuals lead each other to achieve successful outcomes [1].

The concept of shared leadership focuses on the distribution of leadership role across multiple team members with mutual influence on interaction among team members and their performance [1]. Matrix organization structure is followed, where organization has more than one boss. Matrix team model can work in multiple dimensions, which include Cross function matrix teams, Functional matrix teams, Global matrix teams, Extended matrix teams, and multiple teams working. Cross functional matrix team is developed by engaging team members from different functional areas of the company and operate under one leader. Functional matrix teams in which people from same domain as HR domain work under different functional departments of a company. Global matrix teams work from different countries, time zones and cultures, work together to achieve common objective. Extended matrix teams in which people from different organization come under one platform to solve widespread problem. Multiple

team working where several teams work under same platform to achieve broader objective (Schnetler, Steyn & Van Staden, 2015) [2].

Interventions to encourage shared leadership are most effective when organizations are utilizing teams to achieve organizational objectives [1]. Organizations can utilize shared leadership principles within teams, either with a designated formal leader or in teams without a designated leader [1]. Vertical leadership does not need to be discarded and shared leadership can improve the internal processes within a team [1]. Shared leadership works best when teams have a cohesive environment, well-understood goals, and strong inter-team social support. If there are multiple bosses for employees then conflicts emerge, and difficult to improve performance. Working hierarchy becomes more complex, difficult to monitor and control the projects, though software solutions are available to lessen the complexity but people adoption and absorption to the shared leadership is still problematic. Complex channel of communication also becomes difficult to follow sometimes, as erroneous communication may exist. They size of organization is also a problem in following correct communication channel. If size of organization is large, and there are multiple channels of communication, then mistakes and miscommunication may occur [3].

Pakistan IT and Software industry has generated the revenue of 1.23 Billion dollars in FY 2019-20. Government has set target of annual revenue through IT sector by \$5 billion till 2023 [4]. Furthermore, Pakistan has also been ranked as 4 in online labor index in 2017 for having maximum number of freelancers. Due to low cost and high expertise demand, international giants in IT industry have started outsourcing IT projects to developing countries, to generate more revenue and hire more expert individuals, for which internet technologies have produced a lot of help in removing the barriers and taking remote people on board.

Leadership is a key factor for success of any organization, by influencing people to achieve organizational and professional goals, and personal growth [5]. Shared leadership is one of the most effective style of leadership, which helps the individuals to equally contribute to organization's decision-making process, results in quick and effective decision making. It allows employees the right for decision making based on their expertise, which provides quick and effective decision making by the experts rather than decisions by top level management [6]. Though the technology has enabled organizations to work remotely, engage technical / non-technical resources virtually and growing

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virtual teams for expanding businesses, however, virtual team's management is somehow different in various aspects like communication, tasking, loyalty etc. Virtual teams may have sometimes dissatisfaction with leadership being resided in well developed country, which effects the motivation expectation, satisfaction, growth, loyalty, and punctuality. Shared leadership provides the opportunity to remote organizations / virtual teams to make their decisions at their own considering the end objective which needs to be achieved. Virtual team expectation, leadership involvement, tight deadlines, communication barrier and culture difference are the independent variable. The satisfaction of virtual team, its trust, productivity, and revenue are dependent variables. It has also been found challenging to lead virtual teams as compared to face-to-face mode [7]. Hence, the purpose of this research is to determine the effectiveness of shared leadership role in virtual software development teams to enhance productivity and efficiency and meet organizational goals.

Literature Review

Leadership

Leadership is an influential behaviour, role, attitude, power of communication, and quality to lead an organization / people [8]. Leadership is the ability of an individual to determine others in certain way, providing orientation in a particular way to others by the means of communication and convictions. Trust in people is developed in the same direction as the company has its own, emergence of collective decisions, and motivation to human resources [9].

Shared Leadership

Shared leadership provides the opportunity to multiple people to be involved in decision making process as per their areas of expertise. In a meta-analytic review, Wang, and colleagues examined the relationship of shared leadership to team effectiveness. They found that the type of leadership that is displayed within teams is related to team effectiveness with leadership styles of initiating structure and consideration showing a lower relationship to team effectiveness than charismatic leadership.

Decision-making is a shared process; it can take time for groups to make decisions compared to traditional leadership decision-making. It takes more time for team members to communicate and the building of relationships is a long-term process; however, these decisions tend to be more effective than rushed decision-making [10].

Concept of shared leadership is not new; it has been implemented since ancient times. In the declining years of Roman empire, it was ruled by two leaders one in Rome and other in Constantinople. Shared leadership may involve more than two leaders as well. Currently shared leadership is also being practiced with different position titles i.e., CEO, Chairman, Vice Chairman, COO (Chief Operating Officer), President, Vice President. In shared leadership selected team members or all team members act as leaders as well followers. Expertise of all individuals can be utilized in the process of decision making. Shared leadership provides technical managers the flavour of leadership and gain access to capacity building with leading role and decision making [11]. Shared leadership processes add positive impact to the performance of the organization, considered essential for the growth of new ventures, secures the creativity [7].

In a recent study of 62 teams across several organizations in Taiwan, Chiu, and colleagues [11] found that shared leadership was related to team task performance. They found that those teams who shared leadership gained leverage through harnessing the diverse knowledge, skills, and ability of each team member [11].

The research showed that those teams characterized by shared leadership had formal leaders who displayed humility, for example by admitting to their own limitations, were more willing to allow team members to take responsibility. In this way, team members embraced shared leadership [11]. Shared leadership deployed in many organizations, including Microsoft, Apple, Intel, HP, Oracle, Motorola (few of the companies where shared leadership has been practiced over the time. In Apple and Oracle, shared leadership ended up in negative

impact. In Microsoft, HP, Intel and Motorola, shared leadership ended up with positive impact. When a company has a complex business model with complex processes and operational systems. During 1970s, most of the American companies were led by two or more leaders. Shared leadership can be developed in diverse ways, for example after merger of corporate companies, two individuals sharing same jobs, etc. [12].

Shared leadership must be practiced with in defined limits, job responsibilities must be divided and most of all division of credit for the work must also be defined. Managing personal egos is the most difficult challenge for shared leadership. Furthermore, shared leadership success depends on effective way of communication adopted, crisis handling, allocation and reallocation of joint tasks and decision making, and development of mutual understanding and position on key issues for the betterment of company [12].

Challenges of Virtual Teams

Challenges being faced by virtual teams can be categorized into geographical distance, temporal distance, dispersal of virtual teams and their diversity, with more problems related to work culture of the organization [13]. Few challenges include awareness of colleagues and their context, motivational sense of presence of others, difficult to develop trust, level of technical competence of team members, level of technical infrastructure, nature of management, explicit management, common ground, competitive / corporate culture, and alignment of incentives & goals. These challenges result in reduced morale, motivation, awareness, and difficulty in developing trust [14].

Shared Leadership and Virtual Teams

Shared leadership is related to organizational performance Virtual teams are defined as group of individuals working remotely or online to serve an organization for completion of a project or producing desired output despite there exists difference in schedule, culture, language, and ethics. Shared leadership style provides trust, better communication, and ownership in virtual teams. It provides loose coupling and high cohesion. It gives confidence to virtual team members to effectively participate in decision making process of the organization and take necessary measures to improve the existing processes and finding solution to the problems. It has also been studied that shared leadership may not be effective in virtual teams, as the virtual teams are formulated for a noticeably short interval of time, short term, or some time long term projects with no longer association with the organization. The concept of loyalty may lack here, as the virtual team members have concerns for their short tenure and lack of long-term association with the organization considering no tangible benefits would be applicable to them if they keep on working with same virtual organization for long term. Till now there is lack of research on measuring shared leadership effectiveness [15]. There are number of reasons due to which leadership role cannot be effective in virtual team, which include lack of trainings and opportunities for personal growth of employees. Organization does not apply its policies to virtual teams which include retirement and other benefits. Lack of equity and accountability are other reasons for lack of effectiveness of leadership role in virtual teams. There are number of problems which virtual teams face while interacting with the parent organization, include lack of effective communication, less frequent interaction with virtual teams, reluctance to use the technology for communication and hierarchical structure of virtual teams.

Researchers have found shared leadership as the most appropriate leadership style, which provides better influence of leadership in virtual organizations, helps to build better relations with virtual teams over the internet using different software tools for communication and progress tracking. Shared leadership can be utilized effectively if the concept is understood well by all stakeholders. Leadership plays a key role to control and resolve challenges in virtual teams, for which leadership behaviour and traits are very essential parameters. It has been found out that task-oriented leadership produces better results while considering consent of all team members and sharing the common norms. Overall, shared leadership showed the strongest relationship to team effectiveness. Shared leadership showed a stronger relationship with team attitudes and behaviours, compared to team performance.

Most of the research on shared leadership has uncovered the positive aspects

of this leadership form on individual and team outcomes. There is little research uncovering the negative aspects of shared leadership, although there has been some conjecture on when it is ineffective. There are a lot of issues where virtual teams are still in challenging mode, which include inability to understand or read nonverbal cues, absence of collegiality, difficulty in establishing trust, difficulty in understanding the overall condition and situation, and sense of isolation as most of the team members never meet each other in face-to-face mode. Decision in management of virtual teams is taken so frequently, not all the virtual team members can align with decisions. Furthermore, less input is faced from virtual team members [12].

In addition to above, different leadership style also effects productivity and performance of employees. Virtual team members cannot have considerable time to interact with each other, share concerns or short meetups therefore, level of understanding remains missing in virtual team members. Building trust within virtual teams is one of the major challenges. Most of the leadership and management work on pre-understanding and conventional wisdom that people cannot be trusted. It is considered unwise to trust people especially in virtual teams [16].

Overcoming process and organizational challenges, can lead to keep association with virtual team members. As the virtual team members are not considered part of the organizational processes and not enjoying organizational benefits. Furthermore, they are not involved in organizational events or functions, they are just involved in project meetings, due to which they feel isolated [16].

Accuracy in measuring the performance of virtual team members has been a major challenge, for which quantitative and qualitative data is required. Effective feedback mechanism is required to measure the performance of the virtual team members. Telecom companies have been one of the most beneficiary industries of virtual working. Resolving network problems online and running the servers working raise concerns of leadership on performance of the virtual working if some problem rises. Factors which affect virtual team performance include communication tools, cohesion and collaboration, leadership, trust, the location of team members and team size [17].

Virtual teams which are geographically scattered, collaborate with in the teams and other teams with reliance of technology for effective communication and ensuring productivity [18]. Virtual teams result in reduction of cost, travelling time and stress [19]. There are multiple issues which management faces while managing virtual software teams, including conduct of remote meetings, difference in time zones, difference in understanding of work ethics, tracking people and their performance, communication gap, difference of cultures, employees owned hardware and software, keeping disciplined and organized, lack of trust, and physical distance [20]. Few of the challenges highlighted by Khan & Khan [21] include absence of physical contact, delay in communication and difference in time zones.

Software Industry of Pakistan

In software industry of Pakistan, success factors include defining of requirements clearly, style of leadership, user involvement in the development process, clearly defining objectives and goals, and relationship of managers and employees. Leadership style and teamwork are correlated factors. Adoption of effective leadership contribute to success of software project [22].

In modern software development industry, shared leadership is implemented in development of software products. Extreme programming is one the best examples which the software industry applies to deliver quick and quality product. In pair programming two or more team members working closely to develop software product with mutual collaboration. Performance and quality of product while ensuring the deadlines are key parameters in implementing agile development model through extreme / pair programming [23].

In most of the software / IT industry of Pakistan adopts transformational and transactional leadership styles. In transformational leadership commitment of the employees is more evident and linked positively. In transformational leadership, employees are more satisfied and contribute best to achieving organizational goals [24]. If the leadership fails, software / IT project also

fails. Effective leadership is the main requirement to fill the gap between software and product development. Key to software project management is the good management and leadership skills [25]. Sharing of information, development of trust, communication control and cultural differences are major challenges for leadership in Pakistani software industry [26]. Crucial factors for job satisfaction in Pakistan's software industry include pay and promotion, relationship with supervisor / management and leadership, relationship with co-workers and job security. Better services provided by organization and enhanced organizational performance also contribute towards satisfaction of employees in software industry of Pakistan [27].

Despite focus on IT infrastructure there are multiple challenges which IT industry in Pakistan is facing, including political, educational, social, and infrastructural, includes available of high-speed bandwidth, high performance servers and copy right software [5]. Lack of stable policies from the government sector is also a huge challenge, because of which companies are unable to procure specialized equipment. Lack of quality educational institutes meeting the global demand is also one of the issues [28].

Another research study has shown that lack of experienced and qualified employees, inadequate telecommunication infrastructure, lack of proper IT planning, selection and procurement of precise and specialized equipment, are few of the challenges which Pakistan's IT industry is facing [5].

Research Objectives

Role of leadership is important in providing satisfaction and professional growth of employees. One of the objectives of this research is to provide evidence for the role of leadership for virtual employees' satisfaction and their professional growth for employees of software industry in Pakistan. Furthermore, measurements which need to be taken as a part of leadership for the professional growth of employees in software industry of Pakistan.

Research Questions

- What are some of the issues in VTs of Pakistan?
- What challenges does leadership face while dealing with VTs in Pakistan?
- Ways to manage performance of virtual teams in Pakistan.

Research Statement

This research will address leadership issues in virtual teams (individual software engineers) of Pakistan software industry. Effectiveness of global virtual teams have been worked out however, considering the expanding software industry of Pakistan, issues and solutions using leadership needs to be studied. Impact of different intrinsic factors like skill variety, level of training and development, career growth, work meaningfulness, and responsibility of work. These factors need to be explored for professional growth of employees under effective leadership [27].

Research Methodology

Independent, Dependent and Confounding variables having role in measuring the effectiveness of shared leadership have been defined in numerous studies by different researchers. The independent variables include communication channel, understanding of vision to virtual teams, concerns of virtual team to achieve the vision and mission of the parent organization, engagement of leadership (shared) with the virtual teams, level of commitment of virtual teams, caring factor for virtual team members by parent organization, accountability factor for virtual teams and leadership, career growth for virtual team members and experience of an individual working as a virtual team member for any remote organization. Dependent variables include tangible and intangible benefits, problems faced by virtual team members and leadership, and effectiveness of shared leadership. However, confounding variables include

requirement of training for virtual team members, provision of software tools for communication and progress tracking and benefits of working online or as a virtual team member [29]. There are two kinds of research methods which include qualitative and quantitative. Qualitative research methods aid to build hypothesis on quantitative data and drill down more research area. The techniques include focus group discussions, interviews, etc., which require time, cost, and resources. Quantitative research is numeric and statistical form of results, followed by analysis and critical examination. Correlational quantitative research approach will be used to study the effectiveness of shared leadership, using independent variables and confounding variables and their effect on the dependent variables. Questionnaire has been selected as a tool for data collection, as researcher will not need to travel around, save cost and time. Quantitative research methodology will be used for data analysis. Quantitative research methodology provides in-depth analysis of the data with focus on the defined problem, driving some meaningful results from the data collected. Useful relations can be drawn among different variables [30].

Qualitative research methodology will be used for this research study.

Data Collection Methods

Considering the qualitative research methodology there are different methods for data collection which include questionnaire, interviews, focus group discussions, observations, document / Performa analysis etc. Questionnaire will be the method for data collection in this study there are different benefits of using questionnaire as data collection tool which include identifying the patterns and ease to use by the end users. Close end questionnaires provide accurate predictive measures; however, a detail research study would be the pre-requisite for designing of questionnaire based on previous research studies and user experiences. The open-ended questions can be part of questionnaire as they provide more in-depth study analysis of the problem. Sliding scale questions will also be added in the questionnaire to optimally measure the effectiveness of shared leadership in professional growth and job satisfaction of employees.

The questionnaire will be designed for the stakeholders of IT industry of Pakistan which include Software Engineers, Project Managers, Team Leaders, Software Quality Engineers, and other relevant people of the IT industry who have direct role in working as member of virtual IT team in software industry of Pakistan. Factors affecting the performance of IT virtual team have also been included in questionnaire for analysis, which include type of leadership, parent company's policies, nature of project, duration of projects, motivation, communication, trust, time difference, geographical difference, language barrier, difference of culture, and budget constraint. The factor reluctance for usage of technology has also been part of questionnaire. Further measures to be taken or important for enhancing motivation in virtual teams have also been part of questionnaire, which include effective communication, effective use of technology, democratic and shared leadership, frequent physical interactions and offering fringe benefits. Effect of accountability and requirement of loyalty have also been component of the questionnaire. Privacy of every respondent and participant of research will be ensured.

Research Contribution

This research study will help the software industry of Pakistan to adopt new leadership styles for better output, maximum participation, job satisfaction and effective coordination for achieving shared goals.

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