

Virtuality and teams: Dealing with crises and catastrophes

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Abstract.

BACKGROUND: This article bridges the gap between theory and practice and elaborates, for practitioners, how to convert the COVID-19 and other similar crises into opportunities for keeping their business on track for growth. It shows how movement to virtual modes of working, especially virtual teams, can help practitioners meet the current crisis effectively and also prepare for future crisis efficiently.

OBJECTIVE: The objective of this article is to show how the concept of virtuality can help design practices which enable managers/practitioners in effectively managing necessary transitions to virtual work.

METHODS: The article reviews and integrates essential literature on virtuality and virtual teams. It enumerates the benefits and challenges which accompany a sudden and necessary movement to virtual work in teams. Also used are the recently developed theoretical frameworks of teams as essential emergent states and its implications on virtual work.

RESULTS: By distilling insights from past literature, the article advises managers on how to deal with the present and prepare for future disruptions. Usage of overarching frameworks rather than industry/work specific literature enables managers to move away from specific recommendations and focus on general characteristics for wider impact.

CONCLUSIONS: The article demonstrates how organizations can meet disruptive challenges successfully and also prepare for future challenges sustainably using virtuality as a starting point.

Keywords: Teams, virtual teams, virtualization, virtuality, COVID-19, crises



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changing nature of successful organizations. In practice, scalability and flexibility has increasingly become a strategic imperative and necessary organizing principle behind successful workplaces and practices. Not only does scalability and flexibility help organizations in expanding their operations, but also in meeting crisis situations when resources are constrained. The consequences of this dynamism are very important in times of crisis and disruption which have deep impact on the way day-to-day work is carried out across industries and environment. Such dynamism is embedded in the nature of teamwork. Dynamism is inherent to teams also because of their flexibility in membership and deployment. They have enjoyed prevailing importance in all kinds of organizations since long because of the unique advantages they have to offer in all spheres of activity, external and internal, in every type of organization. Having or developing human resource practices around teams can be very effective while planning to meet future challenges to businesses sustainably in the long run.

1. Introduction

Workplaces need to be agile and modular in their design to be able to survive and compete in a dynamic environment. This maxim can be understood to be responsible for multi-level dynamism in and

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Subsequent to the omnipresence of teams has grown a body of research so diverse in content and so expansive in breadth that, at the present time, it has become nearly impossible to capture all its aspects in a single analysis. Research which addresses teams from a multilateral perspective is a rarity. One of the most cited scholarly work of this type is by Kozlowski and Bell who have firmly focused on finding a consistent definition of teams over the years [7, 8]! Such has been the evolution of teams, a recent form of which has been the growth and proliferation of virtual teams in both research and practice. Inherent to things 'virtual' are information communication technologies (ICTs). Virtual teams and, by extension, virtual organizations have come into being and found wide acceptance as a form of feasible organizational units with concurrent growth in the reach and affordability of digital technologies. The global nature of virtual teams and virtual work have allowed them to become the option of recourse for organizations in times of the recent COVID-19 crisis and has made it possible to continue working outside of the traditional face-to-face, restricted space model of the workplace. Pandemics and global disruptions such as COVID-19 have the potential to make overhauling of business procedures necessary so that inclusion of measures such as social distancing and, hygiene for employee safety and compliance can be ensured. Such measures may require to be inducted quickly and on a permanent basis at organizational and industry level across multiple sectors of the global economy. The technology friendly forms which support virtual teamwork can help realise these objectives with the additional advantage of geographic dispersion [7] which can automatically be reaped to unify the advantageous differences in economic environment of nations. But how can the manager become proficient in virtual teamwork to enable quick adoption in organizations which do not have virtual work previously embedded within them? Can the manager ensure any changes in work organization so as to ensure minimal impact on business from the lasting and wide-ranging consequences of future shifts in the environment?

To answer these questions and to offer valuable suggestions to practitioners and managers on facing the new perspectives and implications of workplace organization, I discuss a very important concept from an existing research framework related to virtual teamwork. I apply this framework for finding possible solutions to the challenges of organizing which practitioners are currently facing in view of the worldwide restrictions imposed to curb the spread of the

COVID-19 pandemic. These restrictions have caused every manager to reconsider their roles and to find ways to continue working with social distancing practices. I weigh the pros and cons of introducing relatively permanent changes to work organization based on the research evidence so that a prudent decision can be arrived at regarding the utility of said changes. I also extend an ongoing conversation in the domain of organizational behaviour studies with an analysis of the structure and form of teams in modern organizational setups and their evolving features. I adopt a generalized approach and refrain from framing suggestions within the scope of any single industry or context to increase the reach and impact of this research. I also discuss the importance of preparing for any sudden or calamitous disruptions in the business environment for continued survival and provide important clues for organizing work in these disruptions with resource crunch. Through my analysis, I show how managers can improve proficiency in virtual work using elements of virtuality and also enable themselves to assess how far their workplace is impacted by it. This is achieved through an action plan which is outlined along with features of virtuality and suggestions on possible courses of action.

With this paper, I respond to a pressing need for ways to achieve effective teamwork in an era characterized by uncertainties. I show how to deal with unpredictable and disruptive situations, such as those created by the COVID-19 pandemic, by gleaning new applications and insights from existing bodies of research. My purpose in this paper is threefold. Firstly, I place the earlier results and suggestions given by scholars in a globalized frame of reference and show that the prevailing crisis situation warrants reconsideration of important components of teamwork. Alternatively speaking, I revisit and present important areas of the extensive research which already form cogent lines of enquiry into the nature of teamwork but are scarcely thorough outside of topical applications which dents their utility for practitioners. This study therefore serves as a pragmatic review and annotation of literature on virtual teamwork; a ready-reckoner for organizing work around virtual teamwork and technologies in times of disruptions. Secondly, my reexamination of the literature yields a roadmap for managers looking to guide their organization in the right direction in the aftermath of the current crisis. I show how the literature on virtual teamwork can be used to respond to the current dilemmas being faced because of the rapid and

widespread changes in the operating environment. Thirdly, I look into the future to find sustainable solutions to problems which managers may have to come to terms with in future as similar or different disruptions continue bringing about significant changes in the way organizations take shape and organizational work is carried out. Such changes may also include changes in routinization of work-related tasks which affect how members approach and carry out those tasks.

While most research has focused on remedies for specific job-related difficulties, my analysis extracts common elements faced by every manager at work and provides practical research-based insights for dealing with crises. Such an approach brings greater clarity for enabling an exploration of the potential implications of suddenness with which unaccustomed managers and organizations must switch to and routinize virtual modes of working. Therefore, this research is also well-suited to help managers focus on important facets relevant to their areas of work which they can modify for greater impact and effectiveness while dealing with unforeseen situations, especially crises and catastrophes such as those comparable in scale and impact with COVID-19 pandemic. Experts agree that unpredictable threats from pandemics and other disruptive situations are likely to hamper global economic growth in the aftermath of climate change or even as countries with unrealistic geopolitical ambitions cause widespread trouble. Even in the past, pandemics have taken businesses by surprise and taken a huge toll on margins and prospects. Also, the changes forced by situations arising due to the COVID-19 pandemic are likely to prevent a quick return to normalcy for a long time, subject to recurrence of its spread. At the time of this writing, the pandemic in its current extent has hardly shown any signs of abating. Therefore, it would be wise for managers to become proactive and make subtle but sweeping changes to business practices as soon as possible so that employees can be kept productive and motivated even in the most adverse of external circumstances. This paper is a review of important concepts existing in current literature which is targeted at a practitioner audience. I develop my subsequent discussion along the lines of the most important and observable change in the work environment – the emergence of teams and virtuality in teams, greatly spurred by the use of teleworking as a facilitator. I also explain the importance of these phenomena as we look forward into the future.

2. Changing nature of teams in the workplace

The modern workplace is in a state of continuous flux and evolution as a response to dynamism in external environment and internal constraints. As globalization and internationalization expand their reach ever deeper, such dynamism makes the management of human capital the greatest challenge faced by a manager [11]. Parallel to the growth and transformation of the modern workplace and organizations is the pace of dynamism in teams. The accelerating pace with which teams evolve within and outside the confines of tasks or organizations has resulted in unique theorization around the existence and performance of teams. A recent attempt to explain how transience can be a stable feature of teams by Einola and Alvesson [3] yielded a model which showed teams as processes in the larger framework of the organization. Crawford et al., on the other hand, demonstrated how multiple team membership by single individuals functioned as a structuring unit and contributed to performance [4]. These findings provide much needed order to the complex and unpredictable patterns of behavior as technological aids continue to feature regularly in coordination, communication and other similar aspects of teamwork. When employees are organized in teams, a plethora of processes which are unique to such dedicated aggregations of individuals occur [12]. Managing these processes is challenging in conventional face-to-face entities, and more so when virtual modes of working are involved. Therefore, when a team must transition quickly between these modes of working, the challenge of management takes on a form which may be alien to the unaccustomed leader. It is for this reason that every manager must keep in mind, and be ready to leverage, certain identifying or essential features where both kinds of teamwork converge [13]. These features can form anchors for ensuring overall stability of the team and the task at hand, and can become guiding factors for effectiveness and performance at times. Herein lie both opportunities and challenges in virtual teamwork and both of these are captured by the concept of *virtuality*. Virtuality takes into account the modalities of dynamism observed in teams which are unconventional to show how general facets of teamwork relate to virtual/technological aids.

Foster et al. [5], using their review and analysis of virtual teamwork literature as basis, added the dimension of virtuality in their conceptualization of teamwork to promote a better and more holistic

understanding in the new millennium. Though virtuality had occurred in terminologies of prior research, its usage was fragmented and overlapping with other team characteristics. Foster et al. used a range of latent descriptions found in extant research and ground virtuality into team context. They have positioned the concept as an extension of an existing framework given earlier Hollenbeck, Beersma, and Schouten [6] which was already rich in detail and targeted a consolidation of team dimensions across a wide variety of teams. Hollenbeck et al. had, in their article, outlined four criteria by which different definitions of teams and formulations of teamwork can be grouped together to form a bounded framework which consisted of three dimensions, namely, authority differentiation, skill differentiation, and temporal stability. *Authority differentiation* refers to the clarity and distinction within the team regarding the hierarchical or priority-based nature of work or relationships. This dimension is more role-based than individual oriented. However, *skill differentiation* refers to a more individualized capacity by which individuals contribute to teams. For instance, an operation team has doctors who differ in their skills and expertise, and support staff for whom the same distinction can be made. *Temporal stability* refers to the manner in which the linkages within the team evolve over time with the existence of the team. These dimensions are pragmatic and parsimonious since they are sufficiently encompassing allowing application to most teams, as well as non-expansive so as to avoid unnecessary confusion or overlap in characteristics during application. Additionally, the framework takes a very important element into account which is present implicitly and explicitly in every research work related to teams – context. Context relates to the scope and the conditions in which the team is put together and seeks to achieve its task. It is difficult to make team context apparent in a generalized manner and this framework achieves that objective well. By adding virtuality to the framework given by Hollenbeck et al., Foster et al. have made it more comprehensive and perfectly suited to application to teams located in a vast cross-section of economies and industries. Both research works propose an integration of streams of scholarly work which run parallelly but other researchers have also continued responding to important gaps in literature regarding further integration and synthesis.

Virtuality is a dimension which has many constituent elements. It can intuitively be understood better by any practitioner who has dealt with

differences in real and virtual work. However, it is an emergent phenomenon which takes multiple forms (hence the grounding in context which can be as varied as the shapes of clouds) which makes it difficult to constrain within a single definition. With reference to teams, which are the focus of this article, we can say that for virtuality to be observed, a few features (mostly in task flow and communication) are usually found in varying proportions. These are, in no particular order: non-linearity, asynchrony, blurring of roles to some degree, emergent and rotating roles of members, use of technology, unique modes of communication etc. An interaction among these elements could also play a significant part in determining virtuality. The preceding may be considered only as an interpretive consolidated explanation of what virtuality constitutes.

Worthy of note here, is that given the diversity in context in which teams are found to be working in organizations, a number of definitions and characterizations have been developed to study different aspects related to teamwork and to bring authenticity to research. Therefore, though Foster et al. [5] used twenty-nine different definitions of various characteristics to propose virtuality dimension, Hollenbeck et al. [6] used forty-two definitions to develop their original integrating framework. Such an approach, though it brings academic endeavours closer to reality and ameliorates concerns of practitioners regarding the distancing of research from reality, brings undesirable complexity to theory and findings. A multiplicity of views is not unhealthy for the growth of organizational science or research but makes it difficult for people outside academia to use the results as off-the-shelf or customizable products. In other words, proliferation of organizational research is a problem for practitioners who find it difficult to make sense of research findings directly without intervention from other researchers who can simplify or improve understandability of said findings. Many scholars have repeatedly called for further work to address these problems (see [2 and 9] for a detailed account of these persisting problems). Therefore, though virtuality is directly relevant to practitioners, a multiplicity of views regarding its definitions and applications needs to be rationalized through a careful integration with reference to practice. However, the richness of the concept cannot be ignored since it conveys the breadth of possible applications and can be helpful for managers in finding innovative solutions to unique problems. It is tacit for seasoned managers and practitioners that management is art and science

in varying proportions at different times. Hence, I have presented the concept of virtuality here in sufficient complexity and I now discuss why its impact on the workplace needs to be given attention.

In the domain of virtual work and virtual aids to teaming, the concept of virtuality remains most comprehensive and recurring in both research and practice. All frameworks which deal with virtual work in any form use elements of virtuality implicitly or explicitly. This can clearly be concluded from both articles that I have used as sources for discussing virtuality. Further, many works which have appeared after them have cited these articles. Thus, the concept of virtuality forms the basis for much research and practice-based works which have followed its inception. The purpose here is not to see how virtuality is built into and derives from organizational research, but rather to use its uniqueness and inclusivity to develop solutions to pressing problems which the business world is currently facing in the form of COVID-19 pandemic. Once managers learn what virtuality is and how it can work to their advantage, they can combine it with their management ingenuity to find ways to deal with even future pandemics or crises situation. Promoting a judicious mix of virtuality with other modes of working and in the design of policies can also offer solutions to other relevant problems faced by managers, such as those related to managing diversity and resource restrictions imposed by economic downturns. To clarify further, the presence and extent of virtuality may not be restricted to teams or teamwork. It is only being discussed in relation to teams since it is most observable and useful where teams are carrying out tasks.

The selection of scholarly works which form a part of this review was performed with the sole criterion of relevance to managers in the field who are facing the brunt of the changes introduced by the pandemic to their workplace. The selected works have been presented in a form which best represents the essential features of virtuality and also helps the reader translate the suggestions into practice as a step-by-step process. Rest of this article views teamwork in time of crisis and catastrophes from the lens of the pandemic and related changes in the workplace. In viewing the problems and solutions accompanying virtuality, its distinctive features also become clearer which should help any manager in gauging their utility and facilitating adoption. I next weigh the pros and cons of virtuality and see how it can be increased for teams.

3. Problems posed by virtuality

Virtuality has a wide variety of potential consequences which come with its deliberate or accidental introduction in any form of organization [27]. These have been discussed at length by researchers with reference to focused analyses over the years. An overarching theme which binds observations of consequences is the presence of ‘discontinuities’ with virtuality [14]. Discontinuity refers to lack of coherence in factors which relate to working of the team such as space, sequential dependence etc. This aspect or manifestation of virtuality can also be considered to specially apply where urgency of situations arising during times of crises forces introduction of virtuality in the workplace. This is how the case of current COVID-19 pandemic has shaped up – sudden closure of work spaces and restriction on movement or meeting. Discontinuity is also something which is common to all forms of work undertaken within organizations across sectors. From the perspective of employees, it is only in crises that employees must come to terms with problems which accompany virtual modes of working. Though virtual teams have been around for decades, their adoption had, in a pre-COVID-19 world, been hitherto restricted to geographically dispersed work entities and awareness about them has remained low in small and medium sized business enterprises and in organizations working with conventional non-distributed teams. In other words, what was till now an externality is now affecting the employee directly, urgently and with expectations of continuation over a long period of time. The changes in working environment and consequences of working in such an environment would have been impossible to imagine a few months back. Economies and trade were booming and health was only a minor concern. COVID-19 pandemic has revealed how unprepared and vulnerable the current business scenario remains in the face of sudden disruptive phenomena or discontinuities. For the unprepared, virtuality is posing problems. While managers in every sector struggle to cope with new realities on personal and professional fronts, any guidance in dealing with the unpredictable is certainly of value.

The growth in virtualization is a direct result of spread and affordability of modern communication technologies. But since traditional face-to-face communication has entirely been replaced with e-mail and videoconferencing, it is now apparent that

teamwork requires more than simply communicating the objectives and status about task performance when teams meet physically [15]. Nevertheless, virtual teamwork has proved its importance in ensuring continuity within organizations. At present, virtual teams, which were till now studied as an alternative form of teaming, hold essential status and strategic importance. Elements of virtuality are therefore proving problematic for managers trying to ensure seamless and productive communication.

Another important manner in which virtuality affects teamwork is where conflicts and conflict resolution among the members is in question [10, 31]. Conflicts and dissent are important for novelty and high productivity. But when happening over virtual modes of communication, conflicts change in form and require unconventional approaches for producing similar results. An important facet which relates to discontinuities concerns the difference in time zones which members may face while working with virtualization [19]. These problems, though primarily occurring in global or geographically dispersed teams, may become more prominent with unplanned or unannounced movement to virtuality.

Challenge of managing virtuality or, more importantly, migration to virtuality, lies mostly with the leaders of any organization. Team leaders are equally impacted by these problems. Considerable time and effort have been devoted by researchers in addressing these problems [13, 20]. As with other approaches to leadership, the evidence is mixed and varied. But a sensitivity to these issues is nevertheless important and essential.

Similar to challenges associated with communication, building coordination with virtuality too is a greater challenge than achieving the same goals in conventional settings [28]. Effective coordination is an essential requirement for achieving effective teamwork. If one were to even leave the spatial component of coordination aside, there still remains the aspect of temporal coordination which becomes challenging in teams adopting virtuality. That said, there is still great potential for enhanced coordination in teams working virtually. But it may take some time to build consensus or reach a required level of coordination as threads of disjoint discussions take shape into a coherent whole.

Virtuality and teamwork are both emergent from the context of the team. Therefore, comparisons with face-to-face modes of working are inevitable but necessary [25]. Such comparisons are also difficult to make because of the interaction of factors being

compared. For instance, a manager must take care of employee personality, online behavior, locational constraints, and nature of task simultaneously before allotting work virtually. While this may still not seem far from possible what should the manager do if the move to virtuality has been sudden and the only way to infer all these particulars is by face-to-face exemplars? Making such comparisons should then be guided more by intuition and less by rules. Management literature is full of mutually contradictory findings across settings but is consistent in describing how virtual modes have gained importance despite these complexities.

4. Developing a roadmap for solutions: Glimpses into the future

Every organization is different. Therefore, every organization must adapt differently to every crisis according to its unique needs and requirements. These unique requirements are dictated by the operating environment, type of work the organization is involved in, and stakeholders impacted by the organization's decision. The sociology of organizations and industry norms impact the organization too [16]. Therefore, the suggestions offered in this section form a roadmap for organizations and managers for structuring their work around virtuality. Virtuality and virtual work have proven their importance during the current COVID-19 crisis. People working from home is the new normal and, as of now, it seems that this change will be permanent. I build my suggestions on a central, vital, and functional feature of virtuality – virtual communication and virtual learning. These features are viewed as significant by most adopters of virtuality during the current crisis. These features are also essential for teams in ironing out differences and helping them stay afloat during hard times when teams have moved to formerly alternative work arrangements as the only viable work arrangements [1].

Virtual teams are actual teams – they have similar deliverables as other teams and must also fight for limited resources same as other teams. But they are different in that they are 'far but close' [24]. This paradoxical feature is also a hallmark of virtuality wherein members must control their behavior in distinctive ways. Further complications arise if we were to consider the effects of proximity and personal relations on individual employees, wherein closeness becomes subjective and perception based. Both

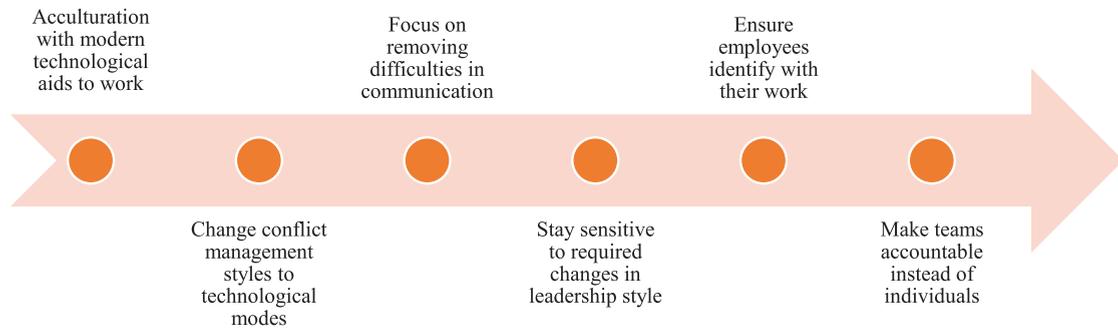


Fig. 1. Roadmap to Virtuality for Managers.

individual factors and organizational support contributes to balancing the extremes but it helps to be mindful about potential problems of this nature while organizing (often in a hurried manner) work around virtuality. Ensuring that employees suitably identify with their work and with the organization can also turn this paradox to the benefit of managers [23]. A possible workaround to reap the benefits of both face-to-face work and virtuality is an investment in the design of hybrid teams – teams having components of both forms of working in agreeable proportions [29].

It is possible to train individuals to conform to norms or to behave in a certain acceptable manner. But the current crisis presents substantial evidence that pandemics and other crises are unpredictable and planning a response in advance is next to impossible. Therefore, it is advisable that instead of fixing individual accountability, teams are made responsible for critical operative tasks since teams are more flexible in their modes of working as compared to other structural units. In virtual modes, communication and trust in the team is critical since face-to-face contact is minimal and probability of conflict is high [17]. Also, in a changing environment, *agility* is critical for survival of the business and has great strategic importance. Introducing virtual aids for teams and putting flexible work policies in place can help ensure agility and, more importantly, *modularity* in the design of work [18]. This can shield the organization from the impact of disruptive changes in the work environment.

Conflict Resolution at any level within the organization is a task often requiring considerable expertise and intuition on the part of the manager. The discontinuities in virtuality are potential sources of conflict [10]. Being careful and investing in mediation and negotiating mechanisms can greatly help in increasing the trust of the employees in the work systems and

also reduce the time required by managers to resolve conflicts. Such systems could even lead to reduced conflicts as employees take up extensive usage for self-regulation.

Figure 1 shows these steps pictorially.

The onus of managing the transition to virtuality falls entirely upon managers. This can prove difficult if they are not aware of how virtuality forms a part of their work practices initially or after the changes introduced as a result of a crisis. Virtual work has long been expected to grow in importance and eventually replace conventional forms of work. The pandemic has hastened the pace of this change by increasing virtuality at all levels across multiple organizations and economies. This is indicative of an imminent move to virtual organizations in near future [21]. However, the nature of such organizations continues to be contested as much work remains to be done on the affordability of enabling technologies. What managers must pay attention to in this regard is that future organizations will certainly exhibit growing embeddedness of virtuality and that present policies and practices could act as a springboard to propel them into the future. The roadmap should prove to be a useful tool for them in this regard.

5. Discussion and implications – Do's and Don'ts

Experts agree that the pandemic and crisis situation is not a one-off incident. History bears testimony to the fact that every crisis takes the economic order through similar cycles of disruptions and recovery. In the case of COVID-19 pandemic, the risks of resuming normal work is so great and the probability of recurrence so high that any signs of recovery remain transient and short-lived. Even minor irresponsible

behavior and non-adherence to guidelines can have huge consequences for the world order. The need of the hour is to survive – both for the organization and the individual. Signs of deep impact have now started showing as unmet individual social needs in times of social distancing turn into instances of violation of the law and guidelines. Even with the presence of redeeming factors like virtuality, can businesses really remain untouched by the crisis as customers and consumers descend into chaos and deeper crises loom on the horizon? How can the manager become proficient in virtual teamwork? Can the manager diminish the impact of virtuality on business?

The nature of problems caused by the pandemic has shown considerable variance across all levels of the society. Even within organizations, stakeholders at every level have been affected. Some sectors on which the economies of several countries heavily depend, such as aviation and tourism, have shut down completely with restrictions in movement. The ability of other sectors to function has been impaired heavily. However, there are some general or common features which can be observed everywhere [27]. The general structure of work in public and private sectors has shifted to an old but under-utilized paradigm of work from home, especially with regard to administrative functions. This is where virtuality has found roots into the routine work and in the manner daily business is conducted. Therefore, it would be unreasonable to form any work practices without acknowledging its presence and importance for the workplace. What is surprising is that it seems that hastily adopted practices may prove to be relatively permanent as the crisis evolves. Therefore, after gauging the extent of impact virtuality has or can have on their businesses, managers should take measures to inculcate virtuality into work practices taking into account the long-term measures it can offer for all types of work. The idea is not to try and diminish the impact of unavoidable changes but tune practices according to them. Ethical considerations can sometimes limit the adoption or acceptance of virtuality. For example, it is impossible for a bank to cede control of its systems at any point in time for migration to online work. Despite this, more and more sectors continue to embrace virtuality as the crisis continues unabated, outsourcing, manufacturing, service, telecom, Information Technology, education, and so on. But much work still remains to be done, both in theory and in practice, for managers to be able to move to virtual modes of working completely.

The pandemic has also been a harbinger of changes in the social structure and economic order of the world. Fortunes have turned as economic giants struggle to cope with the crisis and emerging powers gain a firmer economic foothold. Societies remain divided, with fault lines showing how cultural diversity cannot mask the underlying principles of humanity upon which the social order stands [30]. The economic situation has also become a unifying factor for humans to collaborate in their misery. COVID-19 restrictions have severely dented the long-term ability to pay or spend for common people and the effects of this phenomenon continue to emerge slowly. The world has slipped into a similar slowdown and recession as was the case a decade earlier. The only difference is that this recession is predicted to be bigger than any in the past with money supply and demand also likely to shrink.

I have stressed upon using virtuality, virtualization and virtual teamwork in their present form to turn this crisis into opportunity. The COVID-19 situation has lessons for the future too. Taking note of the vulnerability of the operating environment and unpredictability of the external situations, managers must take a cue. Responding to crises, both external and internal, is a major job expectation from managers within any organization. This is especially true for managers at the middle or the top level of the organization. Though managing crisis is largely an organizational responsibility, individual capabilities must come together to develop necessary synergies and firmness of response. It is only through people helping each other that everyone can come out on the other side. Therefore, the value of teamwork is greatly enhanced during such times. Virtuality then becomes merely an aid to what is actually a human endeavor at the core. We also see support from governments to support virtuality perhaps for this reason only. Virtuality can also be of great help to managers at all levels of the organization and can be put to wider use by managers in every sector. Managers need to stop looking for short-term solutions to business problems and start thinking about the future which lies beyond profitability. Surviving in difficult times does provide a huge degree of perspective. What cannot be stressed enough is the need for building sustainability into work and work practices. Therefore, managers must focus on using this crisis as an opportunity to move to virtuality consciously by recognizing its limitations and the benefits it has to offer in terms of better long-term productivity of employees. Virtuality, in fact, can remove perceived

behavioral constraints and enable more work from employees [26].

This study limits its scope to problems across the spectrum of teamwork and its migration to virtual modes. Such a migration always takes shape subject to regulatory mechanisms in place at source countries. Guidelines for operations may change from time to time and this forms an important context under which any discussion of virtuality is subordinate. I have not focused on any business in particular because instances of teams are truly unlimited and, given the recently discovered emergent and process-based understanding, even the possibilities of teaming are unlimited. Therefore, my analysis should be considered within the boundaries of time. The penetration of ICTs which enable virtuality and virtual work falls under a domain outside of organizational behaviour studies. Therefore, any conclusions drawn here assume a certain availability of infrastructure, even if minimal and under various stages of development or upgradation. Such technological infrastructure may not be available (or have limited availability) in non- or partially- urbanized societies. Work on the evolution of social and human relations as technology develops could also fall into the domain of organizational behavior. The nature of technology is such, that anything definitive today will be questioned tomorrow. Therein lies the scope for future work.

My analysis also opens many directions for future work on a rediscovered understanding of virtuality and teamwork. I have taken up a discussion of virtuality based on its observed manifestations and existing definitional complexity. Future research can shed more light on carrying out comparison of contexts in which virtuality becomes embedded in organizational bedrock. There is also scope for limited empirical testing of any propositions which might be uncovered by context comparisons such that generalization of the impacts of virtuality are not obscured in results. My focus in discussing virtuality lies in the development of long term strategy and policies using short term issues as a springboard. Future research can examine short-term impact through reexamination of literature or fresh work. Researchers can also see how turning a team to virtualization impacts immediate objectives of stakeholders. ICTs are an important element of virtuality and their applications are on the rise continuously. In fact, existing work points to a rising awareness about how ICTs are affecting various aspects of organizational work (e.g. [32]). Researchers can delve further into how the work being delegated to AI can impact virtuality and

effectiveness. This article is lacking in quantitative or qualitative data and relevant analysis to support the conclusions derived from theoretical arguments. Future research can attempt such an analysis. I have also touched upon only in brief on the interactions of culture with virtuality owing to their extreme complexity and long-term nature. This can also form a good future research direction for scholars.

6. Conclusion

Virtuality is something which grew parallelly with the revolution and prolific growth of digitization. It is an abstract but promising premise upon which current and future policy decisions can be based. My analysis and purpose for revisiting this dimension of teamwork is based on the observation that it has subtly entered workplaces the world over even in reactive solutions and responses to the COVID-19 pandemic. I highlight these essential features of virtuality, weigh their pros and cons, and provide suggestions on how managers can turn them to their advantage. In the process I also summarize, synthesize, and integrate existing literature on teamwork and its modern conceptualizations. My intended and most important contribution is to show how we can apply the abstract and put virtuality into action. My contribution also lies in initiating and opening avenues for discussion. The article covers extensively the various facets of virtuality within and outside the backdrop of the crisis. Overall, the pandemic has thrown into relief how fragile the world economic order actually remains even after centuries of advancement and how heavily we must depend on each other to maintain its balance. This study is an attempt to contribute towards ameliorating the ills caused by the current crisis situation. It is critical to develop a holistic understanding of anything which might be of potential use when the variables of a situation are unknown. The COVID-19 pandemic is such a situation. The article is, therefore, expected to serve as a guide for managers to prepare to fight this and any future calamities with a view of ensuring survival of their business. I also call upon managers to envision future problems which current solutions may pose with or without return to normalcy. Being proactive in managing crisis can certainly hold the key to successfully overcoming it. As the author and speaker John C. Maxwell once said:

“If you’re proactive, you focus on preparing. If you’re reactive, you end up focusing on repairing.”

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Conflict of interest

Being a single author study, all the activities related to the research and content of this manuscript were carried out by the author himself. The author is not aware of any conflict of interest, financial or otherwise, in relation to this research or article.

References

- [1] Ashford S, George E, Blatt R. Old assumptions, new work: the opportunities and challenges of research on nonstandard employment. *Acad Manag Ann.* 2007;1(1):65–117. <https://doi.org/10.5465/078559807>
- [2] Carton G, Mouricou P. Is management research relevant? A systematic analysis of the rigor-relevance debate in top-tier journals (1994–2013). *M@ n@ gement.* 2017;20(2):166–203.
- [3] Crawford ER, Reeves CJ, Stewart GL, Astrove SL. To link or not to link? Multiple team membership and unit performance. *Journal of Applied Psychology.* 2019;104(3):341. <https://doi.org/10.1037/apl0000381>
- [4] Einola K, Alvesson M. The making and unmaking of teams. *Human Relations.* 2019;72(12):1891–919. <https://doi.org/10.1177/0018726718812130>
- [5] Foster MK, Abbey A, Callow MA, Zu X, Wilbon AD. Rethinking virtuality and its impact on teams. *Small Group Research.* 2015;46(3):267–99. <https://doi.org/10.1177/1046496415573795>
- [6] Hollenbeck JR, Beersma B, Schouten ME. Beyond team types and taxonomies: A dimensional scaling conceptualization for team description. *Academy of Management Review.* 2012;37(1):82–106. <https://doi.org/10.5465/amr.2010.0181>
- [7] Bell BS, Kozlowski SW. A typology of virtual teams: Implications for effective leadership. *Group & organization management.* 2002;27(1):14–49. <https://doi.org/10.1177/1059601102027001003>
- [8] Kozlowski SW, Bell BS. Work groups and teams in organizations. *Handbook of Psychology, Second Edition.* 2012 Sep 26;12. <https://doi.org/10.1002/9781118133880.hop212017>
- [9] Nicolai A, Seidl D. That's relevant! Different forms of practical relevance in management science. *Organization Studies.* 2010;31(9–10):1257–85. <https://doi.org/10.1177/0170840610374401>
- [10] Shin Y. Conflict resolution in virtual teams. *Organizational Dynamics.* 2005;34(4):331–45. <https://doi.org/10.1016/j.orgdyn.2005.08.002>
- [11] Friedman BA. Globalization implications for human resource management roles. *Employee Responsibilities and Rights Journal.* 2007;19(3):157–71. <https://doi.org/10.1007/s10672-007-9043-1>
- [12] Kozlowski SWJ, Bell BS. Work teams. Cornell University, ILR School; 2004. [cited 2020 Jun 28]. Available from site: <https://digitalcommons.ilr.cornell.edu/articles/1297>
- [13] Purvanova RK, Kenda R. Paradoxical virtual leadership: Reconsidering virtuality through a paradox lens. *Group & Organization Management.* 2018;43(5):752–86. <https://doi.org/10.1177/1059601118794102>
- [14] Gibson CB, Gibbs JL. Unpacking the concept of virtuality: The effects of geographic dispersion, electronic dependence, dynamic structure, and national diversity on team innovation. *Administrative science quarterly.* 2006;51(3):451–95. <https://doi.org/10.2189/asqu.51.3.451>
- [15] Griffith TL, Neale MA. Information processing in traditional, hybrid, and virtual teams: From nascent knowledge to transactive memory. *Research in organizational behavior.* 2001;23:379–421. [https://doi.org/10.1016/S0191-3085\(01\)23009-3](https://doi.org/10.1016/S0191-3085(01)23009-3)
- [16] Freeman JH, Audia PG. Community ecology and the sociology of organizations. *Annu Rev Sociol.* 2006;32:145–69. <https://doi.org/10.1146/annurev.soc.32.061604.123135>
- [17] Breuer C, Hüffmeier J, Hertel G. Does trust matter more in virtual teams? A meta-analysis of trust and team effectiveness considering virtuality and documentation as moderators. *Journal of Applied Psychology.* 2016;101(8):1151. <https://doi.org/10.1037/apl0000113>
- [18] Schulze J, Krumm S. The “virtual team player” A review and initial model of knowledge, skills, abilities, and other characteristics for virtual collaboration. *Organizational Psychology Review.* 2017;7(1):66–95. <https://doi.org/10.1177/2041386616675522>
- [19] Saunders C, Van Slyke C, Vogel DR. My time or yours? Managing time visions in global virtual teams. *Academy of Management Perspectives.* 2004;18(1):19–37. <https://doi.org/10.5465/ame.2004.12691177>
- [20] Verburg RM, Bosch-Sijtsema P, Vartiainen M. Getting it done: Critical success factors for project managers in virtual work settings. *International journal of project management.* 2013;31(1):68–79. <https://doi.org/10.1016/j.ijproman.2012.04.005>
- [21] Panteli N, Dibben MR. Revisiting the nature of virtual organizations: reflections on mobile communication systems. *Futures.* 2001;33(5):379–91. [https://doi.org/10.1016/S0016-3287\(00\)00081-1](https://doi.org/10.1016/S0016-3287(00)00081-1)
- [22] Liao C. Leadership in virtual teams: A multilevel perspective. *Human Resource Management Review.* 2017;27(4):648–59. <https://doi.org/10.1016/j.hrmr.2016.12.010>
- [23] Fiol CM, O'Connor EJ. Identification in face-to-face, hybrid, and pure virtual teams: Untangling the contradictions. *Organization science.* 2005;16(1):19–32. <https://doi.org/10.1287/orsc.1040.0101>
- [24] Wilson JM, Boyer O'Leary M, Metiu A, Jett QR. Perceived proximity in virtual work: Explaining the paradox of far-but-close. *Organization Studies.* 2008;29(7):979–1002. <https://doi.org/10.1177/0170840607083105>
- [25] Purvanova RK. Face-to-face versus virtual teams: What have we really learned?. *The Psychologist-Manager Journal.* 2014;17(1):2. <https://doi.org/10.1037/mgr0000009>

- [26] Makarius EE, Larson BZ. Changing the perspective of virtual work: Building virtual intelligence at the individual level. *Academy of Management Perspectives*. 2017; 31(2):159-78. <https://doi.org/10.5465/amp.2014.0120>
- [27] De Guinea AO, Webster J, Staples DS. A meta-analysis of the consequences of virtualness on team functioning. *Information & management*. 2012;49(6):301-8. <https://doi.org/10.1016/j.im.2012.08.003>
- [28] Montoya-Weiss MM, Massey AP, Song M. Getting it together: Temporal coordination and conflict management in global virtual teams. *Academy of management Journal*. 2001;44(6):1251-62. <https://doi.org/10.5465/3069399>
- [29] Sarker S, Sarker S, Kirkeby S, Chakraborty S. Path to “stardom” in globally distributed hybrid teams: An examination of a knowledge-centered perspective using social network analysis. *Decision Sciences*. 2011;42(2):339-70. <https://doi.org/10.1111/j.1540-5915.2011.00314.x>
- [30] Erez M, Lisak A, Harush R, Glikson E, Nouri R, Shokef E. Going global: Developing management students’ cultural intelligence and global identity in culturally diverse virtual teams. *Academy of Management Learning & Education*. 2013;12(3):330-55. <https://doi.org/10.5465/amle.2012.0200>
- [31] Mokline B. Managing communicative conflicts and relational challenges in virtual teams. *Human Systems Management*. 2017;36(2):115-27. <https://doi.org/10.3233/HSM-171755>
- [32] Rajabion L, Nazari N, Bandarchi M, Farashiani A, Haddad S. Knowledge sharing mechanisms in virtual communities: A review of the current literature and recommendations for future research. *Human Systems Management*. 2019;38(4):365-84. <https://doi.org/10.3233/HSM-190516>