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# Extending the Individual Level of Virtuality: Implications of Task Virtuality in Virtual and Traditional Settings

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## **Extending the Individual Level of Virtuality: Implications of Task Virtuality in Virtual and Traditional Settings**

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External Editor: Joseph Roberts

*Received: 25 August 2014; in revised form: 25 September 2014 / Accepted: 25 September 2014 /*

*Published: 9 October 2014*

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**Abstract:** Virtuality in organizations has usually been treated as a characteristic that is observed either at a team or organizational level. However, the penetration of new technologies into our lives has transformed the entire design of organizations and teams. Not only has the design of teams and organizations changed, but the context and design of our jobs have also been impacted. Today, even employees in traditional team settings use electronic communication tools to work with multiple dispersed contacts outside of their teams and organizations, such as colleagues, clients or suppliers, who do not share the same geographical location. With all of these changes, virtuality can no longer be considered as a concept that is exclusive to virtual team members. In today's organizations, to some extent, everyone's tasks involve non-face-to-face contacts, irrespective of team virtuality. It therefore becomes crucial to identify the task virtuality phenomenon in organizations. With this paper, the example of Yahoo! is used as a case study to illustrate how task virtuality can be relevant for the design of organizations. Additionally, the proposed two-dimensional framework integrates both team virtuality and task virtuality elements in organizations. This framework is novel in that it not only allows us how to conceptualize the task virtuality, but also provides practical guidance for managers to identify and understand the factors leading to high task virtuality and to deal with the resulting complexities.

**Keywords:** task virtuality; individual level of virtuality; team virtuality; organizational design

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## 1. Introduction

Communication with non-face-to-face contacts has been increasingly sophisticating our lives more than anything else. Today, we sell our products to customers we never physically see. We collaborate globally with peers and colleagues we never actually meet. When needed, we hire freelancers from a part of the world that we have actually never visited. Regardless of whether our teams or our organizations are virtual, the increased involvement of non-face-to-face contacts in our daily tasks has complicated how we deal with others.

Oldham, Hackman and Stepina [1] define “dealing with others” as one of the core dimensions in their job characteristics model. It is described as “The degree to which the job requires the employee to work closely with other people in carrying out the work activities (including dealings with other organization members and with external organizational ‘clients.’)” [1] (p. 6). Since this model was developed, the way we deal with others has evolved significantly, both inside and outside of the organization. Organizations, teams and, consequently, jobs are becoming more virtual as we increasingly communicate and perform tasks with non-face-to-face contacts. Researchers have found distinct benefits and challenges of virtuality within organizations and, particularly, within teams. Previous studies have recognized that virtual team structures bring challenges, such as a lack of social cues, inexistence of socio-emotional linkages, limited social relations and a decreased sense of connectedness with others [2–4], in addition to ambiguity and difficulties in communication and coordination of work [2,5,6]. One of the pioneering literature review studies in virtual team research reported negative psychological experiences among virtual collaborators, such as isolation due to the lack of face-to-face contact [7]. However, researchers have widely ignored another important form of virtuality: virtuality at an individual level [8]. As a result, we do not know much about the implications of individual virtuality, because the individual dimension still suffers from many misconceptions and unknowns. This situation brings the need to assess the individual level of virtuality more in detail, as the context and design of the tasks we perform become more virtual. Our proposed framework enables managers and practitioners to use the unique task virtuality perspective to assess their organizational design through the conceptualization of how task virtuality relates to team virtuality and how it differs from it.

In this paper, task virtuality, an individual level of virtuality, is introduced as a new concept that can be considered as a latent and important factor in organizations for organizational design practitioners. The practical relevance of this concept is explained through a real-life example faced at Yahoo! (hereinafter, Yahoo). With this article, it is argued that task virtuality can be observed even in non-virtual teams and conventional settings. We contend that even in a traditional workplace, one’s roles and tasks may involve a high degree of dependency on non-face-to-face contacts. As a result, increasing dependency on non-face-to-face contacts carries additional challenges for individual performance. Individuals, who have limited physical connection with their networks in knowledge extensive settings, consequently know less about their networks and the expertise of the network [9]. This situation discourages employees from collaborating and communicating with others that are not physically contacted. Thus, “out of sight, out of mind” could be perceived as a major challenge for many employees.

## 2. What Happened at Yahoo in 2013?

To address this challenge, in 2013, Yahoo's Marissa Mayer released a confidential memo that called off the employees' flexible remote-working option. It soon leaked to the public and sparked criticism from the press, as well as from the advocates of virtual team collaboration [10]. Its negative publicity was due to the fact that this move was perceived as hugely damaging to virtual team collaboration at Yahoo. This came at a time when empirical findings directly contradicted Marissa Mayer's actions. As a reaction to Mayer, one of the early virtual team researchers, Lipnack [11], shared the empirical findings based on Majchrzak and colleagues' study [12] that proved that co-location of team members was not a requirement for innovation and productivity. However, with off-site working, employees not only become separated from their team members, but also from their colleagues, co-workers, clients and potentially all others. Apparently, the implications of Mayer's decision were beyond virtual teamwork. Several questions that need to be asked include whether the announcement's purpose was to abandon virtual team work to better understand the difference between virtual team work and virtual collaboration. Was the memo saying that all team members have to share the same location? Did that mean Yahoo employees from California and New York offices could no longer setup virtual teams? Additionally, what about global virtual teams? Did the memo mean that all globally dispersed employees of Yahoo had to be located in one single office? Or did this decision have different impacts on virtual collaboration than most of those others think? It was not clear that the announcement alone captures the direct effects on virtual teams. The existing accounts fail to resolve the misconception of virtuality between the team and individual level. Therefore, before proceeding to examine task virtuality, it will be necessary to highlight the concept of virtuality.

## 3. The Concept of Virtuality

A virtual team is usually defined as a group of people, composed of members that are geographically dispersed and mostly dependent on electronic communication tools [13–16]. With the advances of technology, global networks within and between organizations have become easier to establish. "Global virtual teams" are characterized as virtual teams whose members are dispersed around the globe [17]. Virtual teams, whether global or not, have two common characteristics: First, the members lack face-to-face communication with each other, and second, the members largely depend on electronic communication tools [13]. However, over time, researchers have agreed on assessing team virtuality as a continuum rather than an on-off dichotomy, as the degree of virtuality of teams may differ based on the level of face-to-face communication and electronic communication usage [18]. We therefore maintain that team virtuality is a concept that applies to most, if not all, organizations to some degree.

Besides team virtuality, the individual level of virtuality is considered as an extension of team virtuality [8,19]. The concept is defined as "the degree of to which an individual relies on computer mediated communication" [19] (p. 355). Therefore, based on the current model, where individual virtuality is a subset of team virtuality, theoretically, one could say that the higher the team virtuality, the higher the individual level of virtuality, and *vice versa*. Although the current model is theoretically

and logically sound, it does not accurately represent reality. This is due to the fact that the degree of the reliance on computer mediated communication is free from team virtuality. Therefore, we propose task virtuality as a new concept, since the reliance on computer mediated communication with non-face-to-face contacts can be high no matter what the team virtuality is.

Task virtuality can be defined as the level of coordination, collaboration and interaction required with non-face-to-face contacts on which an employee is dependent to complete assigned tasks. This definition challenges the directional relation between task and team virtuality, as we argue that task virtuality is not necessarily a direct outcome of team virtuality. This assumption consequently puts task virtuality out of the broader topic of team virtuality. While task virtuality can be a direct outcome of team virtuality, it should be considered as a distinct concept that every task possess. The determinant of this depends on how much non-face-to-face contacts are involved in assigned tasks. The next section clarifies task virtuality in detail.

#### **4. Task Virtuality Explained**

A new way of working has evolved. With the involvement of ICT tools and flexible work arrangements, small geographical distances can become chasms, while large geographical distances can become closer. Therefore, we no longer assess geographical dispersion as a distracting condition in organizational design, as it is used to be [20]. Remote work arrangements, such as home-office and off-site working, enable the necessary environment for team flexibility, but team virtuality is only one aspect of this flexibility. We have experienced that organizations themselves have become more virtual; call center operations can be migrated from the U.S. to India or shared service centers can centralize certain functions covering worldwide operations. Teams become more virtual, either to capture the best talents around world or to serve in different geographies [21]. This new set of networked, non-face-to-face relations brought the need to assess the virtuality individuals encounter. Therefore, we discuss and position the task virtuality concept as a job characteristic that can be encountered in both virtual and non-virtual team settings with a two-dimensional framework illustrating the possible different formations of team virtuality and task virtuality.

Task virtuality has existed at the individual level in every form of organizational structure since the penetration of the Internet to the workplace, yet it does not exist in models of organizational design. Team virtuality has been the primary focus of these models, while the impacts of task virtuality have been ignored.

We propose that task virtuality can be identified and assessed using two criteria. First is the physical proximity to others, and second is the degree to which electronic communication tools are relied upon to collaborate, cooperate and interact with others to complete assigned tasks. Therefore, the key determinant of the task virtuality is how much the employee is dependent on the non-face-to-face contacts while completing assigned tasks. The higher interdependency of virtual team members will have a stronger impact on both team and task virtuality aspects, since each team member is dependent on others to coordinate their tasks virtually. For example, a virtual project team can be considered as an example of members with high task virtuality driven by team virtuality. The virtual team depends on the collaboration, cooperation and interaction of dispersed project team members, and the project success is highly dependent on each member's input. On the other hand, members of a traditional team

may have widely varied task virtuality profiles, which is not dependent on their co-location, but on other variables, such as the level of the dependency on the coordination, collaboration and interaction of work with non-face-to-face contacts. As a result, not only “dealing with others” becomes an important factor in the classical job characteristics model developed by Oldham and colleagues [1], but also the nature of how these others (e.g., colleagues, clients, suppliers, *etc.*) are dealt with, contacted and interacted; whether virtually or face-to-face.

As we have discussed, task virtuality is not necessarily dependent on team virtuality. Different levels of task virtuality have different implications from an organizational management perspective and necessitate different management strategies. Higher team virtuality may influence organizational behaviors and attitudes, yet a high level of task virtuality may be ignored although fundamentally important. For example, the virtuality of a team may not be as important as task virtuality if team members perform tasks that require a high level of collaboration and interaction with others who are physically distant. In this instance, there will be a high dependency on non-physical co-workers and a resulting increase in the virtuality of the role and associated tasks. In this example, team virtuality alone may cause confusing conclusions if task virtuality is not examined. Therefore, we propose the following two-dimensional framework of virtuality in teams (See Table 1), capturing task virtuality in addition to team virtuality.

**Table 1.** Two-dimensional framework of virtuality.

		The degree of dependency on coordination/collaboration/interaction with non-face-to-face contacts (both inside and outside of an organization, including team members)	
		low	high
The degree of face-to-face interaction contact with team members	high	Low team virtuality low task virtuality	Low team virtuality high task virtuality
	low	High team virtuality low task virtuality	High team virtuality high task virtuality

4.1. Proposition 1

A high degree of face-to-face contact with team members leads to low team virtuality, and a low degree of dependency on non-face-to-face contacts leads to low task virtuality.

Low team virtuality and low task virtuality is experienced in teams where all of the interactions, either within the team or outside, depend on face-to-face contact. Sports teams can be considered as the best example, as there is no virtuality in place. No particular attention to the task virtuality is required in the organizational design, because all ties in an employee’s network are dealt with face-to-face.

4.2. Proposition 2

A high degree of face-to-face contact with team members leads to low team virtuality, and a high degree of dependency on non-face-to-face contacts leads to high task virtuality.

Low team virtuality and high task virtuality is the situation where, even though an employee is a member of a traditional face-to-face team, the role and related tasks require higher dependency on non-face-to-face contacts. One example would be a regular faculty member teaching only online classes. Special attention may be required, because the virtuality is not considered as an important element in the design of organizations, because it may not be observed at a team or organizational level. Similarly, employees working in global call centers can be considered as a well-fit example, since the virtuality of their teams is minimal considering that team members are co-located, yet their work is highly dependent on people who are contacted via electronic communication tools. Another factor that can influence high task virtuality in traditional team settings is horizontal information linkages that are connected via electronic communication tools. In this case, team virtuality would be irrelevant, because the high task virtuality is caused by the dependence on the collaboration/coordination and interaction with non-face-to-face contacts that are outside of the team.

#### *4.3. Proposition 3*

A low degree of face-to-face contact with team members leads to high team virtuality, and a low degree of dependency on non-face-to-face contacts leads to low task virtuality.

High team virtuality and low task virtuality is the case where the members of a (globally) dispersed team are mainly responsible for the tasks that do not involve non-face-to-face work coordination. When no interdependency exists between team members and team members are responsible for their individual assigned tasks, the team virtuality will not have any direct impacts on the individual performance, if all other contacts are dealt with face-to-face, because the team will have control over its ties in its networks and have more insights about the expertise of other people with whom it collaborates [9,22]. A geographically structured sales team (with each individual having its own, independent regional field sales responsibilities) could be suitable as an example. Regional responsibilities are distributed to the team members who aim to achieve sales targets for their assigned regions, while they maintain face-to-face contacts with clients directly in the field.

#### *4.4. Proposition 4*

A low degree of face-to-face contact with team members leads to high team virtuality, and a high degree of dependency on non-face-to-face contacts leads to high task virtuality.

High team virtuality and high task virtuality can be experienced in two different ways. The first possible variation is in the situation where a geographically dispersed team performs tasks with a higher degree of interdependence. In this event, the dependency on the coordination of work automatically involves non-face-to-face contacts that are mainly team members.

Another variation could be one where team members have lower interdependencies, but their tasks involve a higher degree of dependency on coordination, collaboration and interaction with non-face-to-face contacts. The best example fitting the latter variation could be any employee remotely working (home-office) with the assumption that he/she is a member of a team and collaborating with others. As a result, off-site working not only increases the virtuality of teams, as team members lose face-to-face contact with each other, but it also raises task virtuality.

As outlined, higher task virtuality can be a result of team virtuality; however, this is not always the case. It is therefore critical for us to understand the related dynamics between task virtuality and team virtuality. In this way, we can predict the circumstances under which task virtuality becomes an important consideration.

One important thing to note is the instance of mixed team structures. If a virtual team consists of dispersed members whose job virtuality varies, then outcomes, such as performance, behaviors and attitudes, may differ, as well. In this instance, team virtuality is the same for all members in the team [19], yet task virtuality between members will differ. Consequently, this may create unequal working conditions between members who experience high levels of task virtuality and those who experience low levels of virtuality. This should be considered as another complexity in the job design. Addressing this complication entails understanding how this design may cause conflicting comparisons and inferences about individual performances, results and outcomes.

It can be argued that the individual level of virtuality is a condition that is not just dependent on team virtuality. We reasoned that this high task virtuality can be experienced by anyone whose tasks heavily include non-face-to-face contacts other than team members with whom the employee is dependent for completing assigned tasks.

Task virtuality is distinguished from other virtuality definitions in that it requires an assessment of the dependency on non-face-to-face contacts, including both team members and others that are inside and outside of the organization. Unlike previous studies investigating the individual level of virtuality, we extended the concept based on the discussion that co-located workers could also possess high individual task virtuality, if they are highly dependent on collaboration, cooperation and interaction with non-face-to-face contacts. Our main discussion in this paper is to challenge the existing conceptualization, which claims that individual virtuality is caused by team virtuality. However, we argue that a high level of team virtuality does not always determine the level of task virtuality. If the interdependence within team is low, the individual impacts of team virtuality will be minimal. Likewise, low team virtuality does not guarantee low task virtuality, if individuals' tasks depend on collaboration, coordination and interaction with non-face-to-face contacts.

## **5. Task Virtuality and Yahoo**

Yahoo presents an interesting example illustrating the importance of both team and task virtuality, because their company is driven by virtuality in both respects. Therefore, with the above framework in mind, was Mayer right or wrong in her 2013 decision against flexible working? Many of the critics regarded her decision as damaging to virtual teamwork; however, their assessment did not fully



consider the interactions between task and team virtuality. We consider Mayer's decision to have both advantages and disadvantages.

To Mayer's credit, there are disadvantages associated with task virtuality: When an employee works remotely, he/she not only becomes dispersed from team members, but also possibly detached from colleagues and co-workers. The objective of the decision made by Mayer was to enhance the communication and collaboration among Yahoo employees by sharing the office atmosphere with all colleagues from different departments at Yahoo. This objective sounds laudable enough, so why did her decision suffer from harsh criticisms? One possible reason is a misconception between team virtuality and task virtuality.

As discussed previously, task and team virtuality are not completely dependent on each other. Although Mayer's memo directly referenced virtual team collaboration, we believe that this was meant to remove virtual teamwork from the organization and replace it with face-to-face interactions where appropriate. Her memo, however, may not remove team virtuality from the workplace, and as such, we would expect virtual collaboration to still remain vibrant within the company, especially across global teams. Employees in global virtual teams would undoubtedly continue collaborating with their team members via electronic communications tools out of necessity. We would expect her decision to influence the task virtuality of certain employees who will become co-located with some of their colleagues, peers and maybe team members. With this understanding, proponents of virtual teamwork may have been less critical of her decision, as she clearly did not intend to remove either virtual tasks or global virtual teams from the company.

However, it can be argued that calling this decision an execution warrant for virtual teams would be a careless critique. If there are global virtual teams, composed of members that are located in different places across the world, team members will still continue cooperating with their team mates distantly, as gathering all Yahoo employees around the world into one office space would neither be feasible nor rational. Additionally, this was not the real purpose of this decision either. Yet, the difference would be the following: the cancellation of flexible working arrangements would definitely have an impact on the employees' task virtuality, if they will have more face-to-face interaction with their co-workers. Our translation of Mayer's move is that task virtuality is experienced as a complexity in the work practices at Yahoo. The concrete objective of this decision is not to destroy virtual team collaboration, but to eliminate the challenges that had arisen from high task virtuality, encouraging employees to collaborate and coordinate their tasks in a more face-to-face setting, while maintaining the existing team structures that require virtual teams to function.

## **6. Why Task Virtuality Should Matter**

Virtuality is not only socially challenging, as outlined above, but requires employees with a specific set of skills, knowledge and abilities in order to be successful. Empirical evidence indicates that a conscientious work ethic is particularly important for cross-cultural collaboration in virtual teams [23]. The need for conscientious work is offset, however, by the fact that a lack of face-to-face communication and social interaction leads to less meaningful task associations, thus reducing the chances of conscientious work [24]. To avoid a negative environment, Curseu and colleagues [21] proposed that initial face-to-face meetings can, in part, overcome this obstacle in an effort to develop trust and

cohesion in the virtual teamwork. Initial face-to-face meetings could also enhance the establishing of trust and cohesion between employees (particularly ones with low team virtuality and high task virtuality) and other non-face-to-face collaborators.

Leading virtual teams is just as challenging as being an employee within virtual teams. Team leaders must make critical evaluations of virtual employees based on criteria that may in fact be highly influenced by task virtuality. This becomes a particular problem when each member of a virtual team may experience different levels of task virtuality in their jobs. In essence, performance reviews may be a more accurate reflection of the differences in the task virtualities of employees rather than employee diligence. For example, we cannot expect a very meaningful evaluation of sales figures between two salespeople on the same virtual team if one of them contacts customers face-to-face and the other sells over the phone. Therefore, fair evaluations and comparisons should consider only the design of tasks with comparable task virtualities.

These concepts shed light on the practicality of Mayer's decision at Yahoo. Companies like Yahoo should recognize the challenges associated with virtuality, both at the team and task level, while being sensitive to the increasing importance of maintaining virtuality in all respects, from the global team level to the individual task level. Thus, we suggest that companies make an effort to incorporate appropriate measures in their organizational design, accounting for the task virtuality concept. Measures must consider the challenge of assessing employees' task virtualities on a managerial level, the social challenges of high-task virtuality roles and the resulting organizational outcomes. If task virtuality is found as a distracting condition for collaboration and effective cooperation, managers could either consider restructuring the organizational design in a way that reduces individuals' task virtualities or take similar actions as Mayer did.

## **7. Practical Implications for Managers**

As this paper discusses, task virtuality has implications from the selection to assessment of employees. Common misconceptions about the interactions between task and team virtuality lead even the most practiced managers to false conclusions, which can lead selection and assessment astray. To reiterate, those situations at the highest risk of mismanagement are those where the task virtuality of an individual is relatively high, even though the team's virtual characteristics are low.

Managers may believe that a high level of task virtuality can only be associated with high team virtuality. Consequently, their selection of employees for a traditional team may be misguided if they seek candidates with strong knowledge, skills and abilities based solely on traditional tasks, while ignoring qualities relevant to virtual tasks. As we discussed, it is often the case that employees in traditional settings may also have a high level of task virtuality that requires communication, coordination and collaboration with non-face-to-face contacts. If, however, as in the Yahoo example, a company takes deliberate actions to reduce their employees' task virtuality, focusing primarily on traditional skills rather than virtual ones is an appropriate action.

Due to the misconception of the team and task virtuality, managers may consider how they train employees. Often, virtual team trainings are only provided to members that work in virtual teams. Yet, in today's global organizations, everyone has to deal with non-face-to-face contacts. As a result, communication, culture, trust and conflicts can be problematic for conventional workers, as well as

virtual ones. It is therefore reasonable that managers should also consider the impacts of task virtuality and determine the training needs of their staff accordingly in both virtual and traditional team settings. This would overcome the problems of virtual tasking, which are recognized in virtual teams, but latent in conventional teams. The two-dimensional framework illustrated here will provide a preliminary checkbox for managers to evaluate the design of their teams and organizations and coordinate the work and training requirements accordingly. As a result, managers can expect their performance comparisons and evaluations to become more meaningful.

Managers make an extraordinary effort to coordinate virtual team work, because they consider the challenges that virtual team members face to be critical. However, identifying these challenges for virtual teams is not sufficient, because it does not consider the consequences of task virtuality. By the same token, managers leading traditional team settings need to be aware of these challenges as task virtuality becomes more prevalent in organizations.

Managers and practitioners can use this paper to reconsider the implications and challenges caused by task virtuality within conventional teams. Similarly, managers of virtual teams may use this paper to balance the performance expectations for their employees in complex situations where task and team virtualities interact, especially when individuals experience different levels of task virtualities. Whether managing virtual or traditional teams, task virtuality should be considered as an important factor in job and organization design, as it has clear implications in the obstacles and challenges faced with the communication and coordination of work.

## **8. Limitations and Directions for Further Studies**

Even though this study contributes to the literature with a new organizational concept, there are several limitations to address. First of all, the Yahoo case is presented as an illustrative example to highlight the importance and practical relevance of the task virtuality concept in organizations. By doing so, we discourse the distinction between team and task virtuality and refute a misconception that has been widely cited. Therefore, the interferences about the implications, in particular at Yahoo, reflect some common characteristics of the construct introduced contextually. While it is believed that cases are more appropriate methods when presenting conceptual analyses [25], there is a certain need to extend the framework with appropriate models and hypotheses to test the existence and real implications of task virtuality. We acknowledge that the lack of data support is the main limitation that should be evaluated. Further research could overcome this limitation by integrating task virtuality with a distinctive measure that combines the degree of virtuality within teams, as well as within individuals' network groups. Secondly, although this article focuses on virtuality at the individual level, future studies could evaluate the impacts of interdependence between agents in relation to task virtuality. Finally, we also acknowledge that there are various definitions and dimensions proposed in the literature that illuminate the virtuality concept, especially at the team level. Though some researchers particularly focused on discontinuities between team members' spatial, temporal, organizational, cultural boundaries, technology use, differences in team members' work practices [26,27] and linguistic differences [28], the task virtuality concept takes an approach to virtuality that relates the extent of virtual tool usage for coordinating, collaborating and/or interacting with non-face-to-face contacts in order to execute job processes [18,29,30]. The perspective of discontinuities is highly

relevant, as they not only occur at the team level, but also during the entire work process, which involves other parties, both inside and outside of the organizations. Unquestionably, assessing task virtuality from the perspective of discontinuities would add an invaluable contribution to the examination of the relations between task virtuality and other organizational/behavioral outcomes to uncover further implications for organizations.

## 9. Conclusions

The aim of the paper is to extend our conceptual understanding of individual level virtuality, the concept coined by Suh and colleagues [19]. According to this concept, individual level virtuality is an immediate result of team virtuality. This implies a directional relation between team virtuality and the individual level of virtuality. While our model of task virtuality captures the association between team and task virtuality, it further claims that team virtuality is not the only reason why individuals encounter tasks that require virtual collaboration with others.

Our proposed definition differentiates itself from team virtuality by taking all non-face-to-face contacts with whom one collaborates, interacts and coordinates into account, as well. These contacts can be colleagues, clients, suppliers and all other parties that a person is dependent on to complete individual tasks. However, task virtuality is not a concept that can be completely differentiated from team virtuality. As our definition concerns the dependency on all non-face-to-face contacts, including team members, it should include team members, as well. Therefore, the interdependency between agents (within team and within networks) is critical in assessing the degree of task virtuality.

If a virtual team is highly interdependent, where tasks are highly reciprocal, and no other parties are involved in members' tasks, such as in pure virtual team projects, members will experience high task virtuality, since individuals' tasks cannot be separated from team tasks.

On the other hand, the distinction of our proposed definition from earlier approaches of individual virtuality is related with the fact that task virtuality cannot be separated by other non-face-to-face contacts if a higher level of interdependencies exists. For example, if the dependency within a virtual team is rather pooled, the interdependence within the team would be considered rather weak. As the tasks are rather individualized in such teams, team virtuality may not be the only determinant in task virtuality. The reason is that an individual could still experience high task virtuality, if higher dependency on other non-face-to-face contacts is in place, which can be measured by the level of coordination, collaboration and interaction required with other non-face-to-face contacts.

The two-dimensional virtuality framework proposed provides a tool that will help organization designers to assess individuals' exposure to both team and task virtuality. Based on this framework, managerial guidelines are developed for the consideration of the organizational design of teams and of the tasks of individuals. From a managerial standpoint, task virtuality deserves more attention, as it is an inseparable part of today's working environments. As a result, managers will be able to provide more relevant leadership and supervision according to the needs of the employees' task virtuality, and they will be able to take more serious measures if task virtuality is found to be a distracting condition for collaboration in the organization, as Mayer did. Even though it is too early to tell at this stage whether task virtuality has a significant impact on organizational outcomes, it is certainly worth analyzing further. Either in virtual or in traditional team settings, task virtuality will play an important

role as we depend more and more on ICT tools in our daily communications with others. The approach presented in this paper will regenerate the focus in organizational design, as this paper contributes to the literature by highlighting the fact that the challenges of and the exposure to virtual work could also be experienced in traditional settings.

### Conflicts of Interest

The author declares no conflict of interest.

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