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Why virtual teams work – State of the art

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Abstract

Teams in most work contexts work virtually to different degrees, for example in three-dimensional virtual environments. Regarding the development of new information and communication technology, an important question is, what influence the pervasion of innovative electronic devices, virtual and augmented reality as well as the respective software have on individual behavior and as a consequence on working processes. Industry as much as research embraces and analyzes processes and factors that influence virtual teamwork. In this paper a literature review is presented in order to merge findings of factors that influence the performance of virtual teamwork, such as the degree of virtuality and the presence of shared mental models. Results are presented as synthesis of these findings and a research agenda is derived.

Keywords: Virtual team, Teamwork, Team management, Digitalization

1. Introduction

Even though digitalization might very well be referred to as hype, we see some quite real fundamental changes driven by it. Interestingly enough, these changes do not only emerge in the context of information and communication

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technology (ICT), but also, and to a considerable degree, in society, its individuals and institutions[1]. Many of these changes influence the way we work and how we organize the value added. Relevant topics have been discussed in context of computer supported collaborative work (CSCW) since the 1980s[2]. But the current trend and new opportunities to virtualize whole work processes and the teams involved induce the need for up-to-date research. The aspects of influencing factors on the performance of virtual teamwork have up to now not been analyzed and structured to a sufficient degree.

Work in virtual teams (VTs) has long been a relevant topic due to different reasons. On the one hand, VTs can be a means for saving money when cost cutting is a major concern in organizations[3]. On the other hand, global companies with a dispersed workforce need VTs to be quick and agile. But for the current workforce, face-to-face communication, at least from time to time, appears to still be of major importance[4]. Moreover, most of the people are not familiar with working productively in a virtual environment. Research on the behavior of future generations already shows that growing up with virtual reality might lead to an easy adoption of virtuality as a "normal" working environment[5]. That might lead to an increasing efficiency of VTs, since its members' concentration to the task at hand is not deterred due to the environment.

For specific contexts, work in VTs seems to be advancing and can even be the dominant logic of work organization, which some prominent examples show: Basecamp[†], which has a head quarter but most of its employees work remotely and FlexJobs[‡] being a completely virtual company with no central office at all. According to the observations of past challenges and the present development[6,7], this paper seeks to define the state of the art on factors influencing the performance of VTs. We use the structured instrument "literature review" to first of all find out, whether the results concerning the already researched factors are in line and how they can be synthesized. Thus, the goals of this paper are to present an overview of factors influencing the performance of VTs and to deduce a research agenda with special respect to the manifestation of digitalization as a comprehensive process of change.

The overall problem to be solved starting with this first step is to understand what makes VTs work efficiently considering the degree of virtuality and technology adoption of the workforce. From a research point of view this is relevant, because an interdisciplinary approach of psychology, sociology as well as information systems research (ISR) is necessary to gain results. This study is set up from an ISR perspective to be a first step to form such a team for further research. From a practical problem solving point of view this is relevant, because companies might gain from making good use of VTs with respect to organizational guidance and attracting a workforce, as it might be a style of work, which is appealing to the younger generation that is native in digital environments.

The following section provides the foundation for this paper, defining the research questions. Then the research method is explained in detail and relevant concepts are defined. The findings of the literature review are analyzed and structured to provide new insights. The results are discussed and serve as initiation for the derived research agenda in in the final section.

2. Research method

Past research concerning VTs shows that there is profound research enlightening certain aspects of virtual teamwork, such as studies about work-motivation, trust in VTs, etc. Thus, a very heterogeneous body of literature exists that now is included in this literature review in order to provide a synthesis. The literature review can be positioned as shown in Table 1.

Table 1. Positioning of literature review following the taxonomy by[8]

characteristics	categories			
focus	research outcomes	research methods	theories	practices or applications

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[†] https://basecamp.com/ Basecamp developed the project management software of the same name.
[‡] https://www.flexjobs.com/ FlexJobs is a job board with focus on communicating remote job offers.