Chapter 10

Shared and Distributed Team Cognition and Information Overload: Evidence and Approaches for Team Adaptation

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ABSTRACT

This chapter discusses information overload (IO) from a team level perspective. Organizational team research underlines the importance of emergent knowledge structures in work groups, so-called team cognition. Two types of team cognition are introduced that are closely related to IO, namely shared team mental models and transactive memory systems. After a brief introduction of the concepts, empirical evidence about the impact of team cognition on dysfunctional IO as well as functional information exchange are presented. In the second part of the chapter, strategies and tools for adapting team cognition in high IO situations are introduced. The focus on team level constructs in IO research complements individual, technical, and organizational approaches to IO by underlining the importance of team knowledge structures in social systems.

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INTRODUCTION

Team Level Perspective on Information Overload (IO)

In modern organizational settings, many tasks and projects are performed by teams. Due to technical developments, collaboration over spatial, temporal, and even organizational boundaries becomes normality (e.g., virtual teams; Hertel & Konradt, 2007). Although organizational psychology has focused on the facilitation of information exchange within teams (cf. Mesmer-Magnus & DeChurch, 2009), many teams report dysfunctional information exchange or information overload (IO) on account of too much and irrelevant information (cf. Eppler & Mengis, 2004). In this chapter, information overload (IO) is considered a dysfunctional team process occurring at the team level. Regarding information sharing in teams, several authors have suggested that electronic media can overload team members with information (Ellwart, Happ, Gurtner, & Rack, 2015; Miranda & Saunders, 2003). Especially simultaneity or fast and immediate answers in electronic communication settings facilitate the experience of IO (Thorngate, 1997), mainly in association with e-mails (Bawden, 2001; Speier, Valacich, & Vessey, 1999). Social media, such as Facebook or WhatsApp (which are based on pushing information), did not even exist when these early studies were conducted, and this might add to IO. Thus, IO in teams can be described on a quantitative dimension as too much information obtained and on a qualitative dimension if the information exchanged within the teams lacks novelty, is low in accuracy, is ambiguous, complex, or uncertain (cf. Evaristo, 1993).

There are manifold consequences of quantitative and qualitative IO in teams and organizations. Research discusses emotional and motivational consequences (stress, anxiety, or tiredness; Bawden & Robinson, 2009; Edmunds & Morris, 2000), as well as effects on performance and team efficiency (Ayyagari, Grover, & Purvis, 2011; Rutkowski & Saunders, 2010) which can lead to increasing organizational cost. Eppler and Mengis (2004) differentiate four main symptoms/effects of IO in their review: (1) limited information search and retrieval strategies (e.g. lower systematic search strategies, limited search directions), (2) arbitrary information analysis and organization (e.g. overlapping and inconsistent information categories, highly selective information disregard), (3) suboptimal decisions (e.g. loss of control over information, higher time requirements for information handling, lower decision accuracy) and (4) strenuous personal situations (e.g. inefficient work, demotivation, lowered job satisfaction, potential paralysis and delay of decisions). Especially in team decision making, efficiency decreases as the amount of information increases (e.g., Bawden, 2001). In their explorative interview study analyzing the main barriers and enablers of organizational virtual teamwork in multinational organizations, Rack, Tschaut, Giesser, and Clases (2011) found that virtual teams often exchange
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