Distributed Collaboration in Organizations and Networks

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Abstract

Geographically distributed collaboration continues to grow in importance within organizations and networks of various types. These “virtual” or distributed teams frequently use information systems and technologies that enable them to span multiple spatial and temporal boundaries. Distributed collaboration in organizations and networks present unique opportunities for understanding the management and leadership of virtual teams. This minitrack explores many of these questions, using a wide variety of research methods and approaches.

1. Introduction

Teamwork in organizations today frequently involves members working across multiple spatial and temporal boundaries in complex configurations comprised of multi-team memberships, member turnover, and multiple organizational boundaries, among other things. Contemporary virtual teams can rarely be studied as single units because they are often co-mingled into larger organizational networks with multiple teams, locations, and organizational overlap. Most business, government, and scientific projects and processes today have a very prominent virtual dimension. Distributed collaborators often do not have the same first language, come from different national cultures, work in different time zones, may be employed by different organizations, and enter collaborations with different expectations for group processes. These differences, among others, present unique opportunities for management and leadership.

Because of the multi-disciplinary nature of research on distributed collaboration in organizations and networks (DCONs), we encouraged submissions that may inform practice and research in virtual collaboration through a variety of academic lenses. We also encouraged papers discussing methodological issues and innovation to address the complexity in the study of virtual teams, organizations, and networks. This minitrack includes papers that offer direct and indirect insights into the successful operation of virtual

teams, organizations and networks, including research in the vein of computer supported collaborative work (CSCW), computer supported collaborative learning (CSCL), and social networks.

2. Overview of DCONs Topics and Themes

Because distributed collaboration permeates all aspects of organizations and networks, there are a wide variety of topics and themes associated with this minitrack. These topics include themes like: spatial and, temporal separation; cross-cultural communication; inter and intra-organizational dynamics; multi-cultural issues; shared leadership and power distance; trust, deception, emotion, personality and social loafing; innovation, learning and training; social and organizational networking, multi-team systems and team science; and the effect these factors have on communication and collaboration, team coordination, outcomes and performance.

Our call for papers this year yielded a variety of excellent papers that covered many of these topics. The minitrack this year includes six papers selected during our peer-review process. Collectively, the selected papers present research and practical lessons about the effective use of technology to support collaboration. The papers also present experiences from the individual user and team level perspectives, both of which are essential to a comprehensive understanding of virtual collaborations.

In the following sections, we present a brief summary of the papers in the minitrack on Distributed Collaboration in Organizations and Networks (DCONs) to be presented at HICSS-53, including our Best Paper nomination.

3. Paper 1: The Proximity Paradox: How Distributed Work Affects Relationships and Control

In our first paper, Rebecca Downes explores the proximity paradox, and seeks to understand how distributed work affects relationships and control. She

uses interview data to examine how managers enact organizational control when separated from their direct reports by geographic distance. Her findings suggest that a need for additional context drives managers to cultivate deeper relationships with their staff, creating an unexpected outcome: working at a distance makes managers feel closer to their staff. She presents a theoretical framework demonstrating how context and relationships are related to organizational control and discusses implications for distributed work and organizational control research.

4. Paper 2: Shared Workspaces of the Digital Workplace: From Design for Coordination to Coordination for Flexible Design

Our second paper, by Clara Nitschke, and co-authors Helena Vallo Hult and Fernando Bigolin, helps us to better understand shared workspaces. The emergence of new digital platforms and social software at work changes workplaces and how people coordinate their work. To date, coordination has only been studied minimally in the context of the social software enabled digital workplace. Through a qualitative analysis, this paper identifies different coordination mechanisms (CM) in various practice areas as envisioned and used with the same collaboration platform by three healthcare workplace teams. The findings illustrate the flexibility of shared workspace designs of the digital workplace where CM cannot be anticipated a priori by researchers and software developers. The paper ends with a discussion of findings from a sociomaterial perspective to encourage studies that monitor the flexible and complex enactment of temporally emerging shared workspace designs.

5. Paper 3: Analysis of Task Management in Virtual Academic Teams

In the last paper of our first session, Sabine Nagel and Florian Schwade discuss task management in virtual academic teams. Social Collaboration Analytics (SCA) aims at measuring collaboration in Enterprise Collaboration Systems (ECS). In this paper, the authors apply SCA to investigate the use of Task Management (TM) features in virtual academic teams on a collaboration platform. This paper contributes to theory by developing the TM Catalog describing the elements and characteristics of TM. The literature review identified only three studies analyzing the use of TM features in ECS. These studies base their analyses on

transactional data (event logs). The authors propose to analyze both the structure and characteristics of tasks, as well as how tasks are used. In this paper, the authors show how SCA can be applied to gain insights on the use of TM features. Based on data from an academic collaboration platform, the authors demonstrate the characteristics of tasks and how different types of virtual academic teams make use of TM features.

6. Paper 4: A Social Network Perspective on the Success of Open Source Software: The Case of R Packages

Our second session opens with a paper by Gianluca Zanella and Charles Z. Liu exploring the success of open source software. In this paper, the authors seek to identify the factors that influence the impact of open source software (OSS) on user communities by analyzing the evolution of the OSS network. Based on longitudinal data collected from the Comprehensive R Archive Network (CRAN), the authors examine empirically how the network of R packages evolves over time and exert its influence on the scientific community. The authors find that critical network features derived from CRAN, such as page-rank, closeness, and betweenness centralities, play a significant role in determining the impact of each package on the research and publication activities in the scientific community. Furthermore, the authors argue the performance of R packages can be explained as a flow of information from the core to the periphery that exhibits strong spillover effects.

7. Paper 5: Identifying Knowledge Brokers in Enterprise Social Media

In the second paper of this session, Mia Leppälä and minitrack co-chair J. Alberto Espinosa present an approach to identifying knowledge brokers in enterprise social media systems. Knowledge brokers act as a bridge between people and issues. They facilitate knowledge creation and sharing and connect communities of practice. The extant literature has focused mostly on roles and network positions of knowledge brokers. This paper adds communicative actions to identifying these important actors. In the present study they develop and propose a method to identify knowledge brokering communication in an enterprise social media (ESM) platform. They posit that active knowledge brokers can be identified based on their generic social media communication. The authors use a large data set containing 124,015 messages among employees, and their network positions by social

network analysis to identify knowledge brokers, and further analyze a sample of the communication content qualitatively. They argue that better understanding of the identification of knowledge brokering communication in a collaboration network can benefit employee assignments and help develop communication practices in ESM, leading to improved knowledge sharing and creation.

8. Paper 6: Identifying Bridge Users: The Knowledge Transfer Agents in Enterprise Collaboration Systems

Finally, in our best paper nomination, Priscilla Jimenez-Pazmino, Trenton Ford, Ronald Metoyer, and Nitesh Chawla present an approach to identifying bridge users in enterprise collaboration systems. In recent years enterprise collaboration systems (ECS) integrated with social network capabilities have become popular tools for supporting knowledge management (KM) strategies and organizational learning. Increased usage has resulted in higher interest in understanding and classifying the roles that ECS users adopt online. Previous research has investigated user role identification by considering: the degree of participation in an ECS; the user interactions with shared content; the user role in the ECS network; and the user KM-role observed within an interaction. Although all of these factors provide insights into ECS user engagement, they fail to fully consider the knowledge sharing perspective.

In this paper, the authors define "bridge users" within the context of KM and present a framework for identifying them using semantic analysis of user-generated content. Further, the authors present results and observations from tests of our pipeline on the ECS of a large multinational engineering company with more than 100k users.

9. Towards a HICSS DCONs Community

While distributed collaboration has gained widespread acceptance and use, to the point that practitioners often no longer distinguish them from more traditional face-to-face teams, there are still many challenges that remain unresolved. This realization led to our expansion of this minitrack a few years ago. This expansion has demonstrated great potential to stimulate the creation of a robust, interdisciplinary HICSS community studying distributed collaboration in organizations and networks (DCONs). Given the increasing use of distributed collaboration in industry, academia, medicine, and civil society, such a community is invaluable to scholars and practitioners alike. The DCONs papers at this 53rd HICSS represent what we see as an important trend, which we believe will remain for many years to come. It is a privilege to bring you these exciting papers and we look forward to having productive and stimulating discussions about current and future DCONs issues.