Studying Technologically Dense Environments through Documenting Practices

Carsten Østerlund, Steve Sawyer, Elizabeth Kaziunas

This paper explores the methodological aspects of studying distributed work in technology dense environments by focusing on the more tangible aspects of this work, namely documents. Using data from a pilot study of virtual organizing among social scientists, there is an outline for a document-centric methodology. The paper shows how (1) researchers should engage in an initial mapping of documents before starting to track them, (2) the ongoing flow of virtual organizing only becomes apparent by triangulating the digital flow of documents, observation of tangible documents and repeated behavioral inquiries, (3) documents support virtual organizing do not serve as stable information artifacts, but rather become snapshots in time, part of the general flow of work across numerous documents and applications.

Documents are defined as typified and material communication, whether electronic, paper-based, wall mounted or set in stone, invoked in response to recurrent situations. As documents carry institutional structures and point to both past and future activities they open a window to larger organizational practices. Documents provide a window into the distributed coordination of scientists and the digital infrastructure that supports them. The increased proliferation of scientific collaboration and production created a need for tools to locate colleagues' work, to find publications, create and share collections of data, and coordinate collaborations.

Distributed work is dynamic. Scientists engage with many documents in their daily activities, from research reports to email from colleagues to facilitate different types of virtual collaboration with different participants, at distinct times and places, and around different kinds of content. Previous research is drawn together through an emphasis on practices associated with communicative artifacts and their temporal, spatial, and material dimensions. Only through studies of people's unfolding activities can we understand how documents are produced and reproduced.

Documents are the manifestation of individual, group or communal practices. In many professions, such as academia, documents make up the main outcome of a community's practices. What do these material relations do? How do documents work as manifestations of social relations? Based on John Law's concept of 'relational materiality', the answer is the documents enact presence, manifest absence, and Otherness. Presence refers to whatever is present in a document, such as descriptions or data relevant for a community. Absence points to whatever is absent but manifest in the document. It can be the activities, people, or things to which the descriptions or data in the document refers. Otherness include an endless number of processes and contexts necessary to whatever is present and absent in the document but also invisible to it. It may range from things that those engaged with the document know

through experience and thus do not need to mention, or matters that are actively suppressed in order to realize specific practices.

In an effort to develop the methodological tools suited for a study of documenting work the team is engaging in a two phase pilot study. First, the team investigated their own distributed practices. The subjects are the three coauthors and a colleague from another major research university in the US. Second, the team is in the process of selecting four or more collaborations among distributed social scientists. To collect data, documents and their infrastructure are studied. The document-centric methodology developed in this paper offers a new perspective on work in technology dense environments and a call for revised research strategies. This paper speaks to one of the core questions associated with work and organizing in technology dense environments. How do technological and organizational practices interweave? The paper focuses on the role of documents in supporting distributed work among social scientists. The intent is to build on more than 100 years of research in this area to advance conceptualizations of and methodological approach to current documentary practice in the age of distributed coordination.