Technology-Shaping Effects of E-Collaboration Technologies: Bugs and Features

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ABSTRACT

Recently, Orlikowski and Iacono (2001) called for increased theorizing of the information technology (IT) artifact. Both authors have made important contributions to what they refer to as the “ensemble” view of technology. By contrast, the “tool” view has remained noticeably underdeveloped. The goal of this essay is to begin articulating such a tool view for research on e-collaboration technologies. Referred to here as “the technology-shaping perspective,” this view eschews technological determinism but nevertheless looks for broad patterns of probabilistic effects that can be attributed to technology’s material features. In brief, the technology-shaping perspective holds that technologies pose problems for users who want to use them to accomplish particular goals; the solutions users create for those problems during recurrent use may exhibit certain regularities across different contexts. Consequently, small differences in the features of apparently similar tools could be associated with big differences in usage patterns and social outcomes. The claim is that conducting future research on a technology-shaping agenda could yield cumulative results that are less “disappointing” than many scholars find group decision support systems (GSS) research, the largest single body of work on e-collaboration technologies.

Keywords: IS theory; IT artifact; mediated communication; technology features

INTRODUCTION

The launch of a new journal offers important opportunities to reflect on the nature of the subject matter and to chart research directions. Taking these opportunities is particularly valuable when the topic domain has been the nexus of several vibrant research streams for more than a quarter century, as is the case with this new journal on e-collaboration technologies. The goal of this article, therefore, is
to stimulate discussion about new ways to investigate those technologies.

The point of departure for this essay is Orlikowski and Iacono’s (2001) observation that the IS field has not sufficiently engaged the problematic nature of its subject matter. Orlikowski and Iacono (2001) analyzed conceptualizations of IT in articles published in a leading IS journal. They found that descriptions of the IT artifact were absent in 25% of the articles and that the remaining articles exhibited many specific conceptualizations, which they grouped into four categories. Two categories are particularly relevant here: the tool view and the ensemble view. The “tool” view, described as “the common, received wisdom about what technology is and means” (Orlikowski & Iacono, 2001, p. 123), was present in 20% of the articles in the journal they examined. The “ensemble” view, to which Orlikowski and Iacono have both made highly important contributions, views technology as only one element in a package of resources; this view was found in 13% of the articles in their analysis.

Orlikowski and Iacono (2001) concluded that more work needs to be done to theorize the subject matter of the field so it does not “disappear from view, [become] taken for granted, or [be] presumed to be unproblematic” (p. 121). Although they acknowledged that “no single, one-size-fits-all conceptualization of technology … will work for all studies” (p. 131), they offered five premises as a starting point for further theorizing. These premises included the non-neutrality of IT artifacts; their embeddedness in space, time and context; their multiplicity of components; their dynamism; and so forth.

What Orlikowski and Iacono (2001) neglected to point out is that those five premises are accepted cornerstones of the ensemble view, which is the one well-articulated class of IT artifact conceptualizations in the IS literature. Those premises might not, however, be appropriate for other views, such as the tool view.

The premises of the ensemble view are well understood, but those of the tool view are not. Perhaps because the tool view has always been so deeply engrained in the IS world view, its proponents have rarely found it necessary to clearly articulate their assumptions. By contrast, researchers who advocated alternative (i.e., ensemble) views (e.g., Kling & Scacchi, 1992; Kling & Iacono, 1988; Orlikowski, 1992, 2000; DeSanctis & Poole, 1994; Poole & DeSanctis, 1990) found it necessary to craft finely articulated and highly persuasive conceptual platforms to challenge an implicit world view that had never been sharply delineated.

If one agrees with Orlikowski and Iacono (2001) that additional effort is needed to conceptualize the IT artifact and that no single conceptualization will work for all research purposes, then the task for the field would now seem to be to carefully articulate alternatives to the ensemble view, such as the tool view. I say this not because I intend to criticize the ensemble view. Indeed, I believe it characterizes some of my own research. Instead, I base my assertion on the prominence of the tool view in prior e-collabo-
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