

Using IOS in a Collaborative Way: A Conceptual Model

Hamid Nach, UQAR, Lévis, Canada

Marie-Claude Boudreau, University of Georgia, USA

ABSTRACT

Interorganizational systems (IOS) are information and communication technology-based systems that transcend organizational boundaries. However, their use does not always lead to successful interorganizational collaboration, particularly in settings where significant changes in business processes are needed. The architecture, engineering and construction (AEC) industry offers such a setting, in particular as its stakeholders are encouraged to use of a novel type of interorganizational system known as building information modeling (Building Information Modelling), which can only be successfully used if parties collaborate. This research seeks to uncover what leads to interorganizational collaboration in this particular context. Drawing on rich data from interviews with BIM users involved in interorganizational projects, the authors propose a conceptual model of how interorganizational collaboration unfolds. The authors highlight the central role played by interorganizational infrastructure, collective identity, and IT affordances, on interorganizational collaboration.

KEYWORDS

BIM, Collaboration, Identity, IOS Use

INTRODUCTION

Interorganizational systems (IOS) are information and communication technology-based systems that transcend organizational boundaries (Kumar and van Dissel, 1996). Their transboundary nature often requires a high level of collaboration and commitment toward a shared goal. However, effective and productive interorganizational collaboration can be problematic (Hogg et al., 2012), particularly when it involves significant changes in business processes or affects the accepted business model. Such challenges may induce organizations to limit their involvement in a common project, or prioritize their own goals rather than the overarching ones.

In the information systems (IS) literature, researchers focusing on interorganizational systems have developed numerous theoretical arguments to explain the effectiveness of interorganizational collaboration. Such accounts include conflict (Kumar and van Dissel, 1996), emotion (Hekkala and Newman, 2011), trust (Zolin et al., 2004), culture (Yu-Ting Caisy and Nguyen, 2008), structure (Thomas and Bostrom, 2010), control (Gallivan and Depledge, 2003), roles (Hong, 2002) and decision making (Premkumar and Ramamurthy, 1995). However, only a few studies have adopted an identity perspective in the examination of collaboration in IT-based distributed projects (e.g. Gal et al., 2014; Levina and Vaast, 2005). These few studies have demonstrated the mutual shaping relationship between identity and IT use in interorganizational context; they have fell short, however, from explaining the extent of interorganizational collaboration in settings where multiple organizations are engaged in a common task and share (at least to some degree) a sociotechnical infrastructure (Gal et al., 2014).

The architecture, engineering and construction (AEC) industry offers such a setting. Indeed, stakeholders involved in the AEC industry (e.g., builders, architects, contractors, project managers, etc.) are increasingly required to use a novel type of interorganizational systems known as Building Information Modeling (BIM), which can only be successfully used if parties collaborate. BIM is a set of interrelated technologies and processes that constitute an approach to digital project information and data management throughout a building's life cycle (Akbarnezhad et al., 2014). It is particularly challenging for organizations to be successful in their use of BIM because, on the one hand, it involves multidisciplinary teams with specialists in various areas; on the other hand, it also changes the nature of work relationships between project participants and requires tight collaboration from the early design until the project handover (Sebastian, 2011). The extent of interorganizational collaboration, indeed, is central to the success of BIM. Given the above, the research question at the heart of our work asks: In the context of interorganizational system usage, what leads to interorganizational collaboration?

Drawing on rich data from interviews with AEC professionals, we propose a conceptual model of how interorganizational collaboration unfolds. The use of the grounded theory method was particularly valuable as it allowed us to identify the central role played by interorganizational infrastructure, along with collective identity and information technology affordances (Leonardi, 2011), affect interorganizational

24 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/using-ios-in-a-collaborative-way/230883

Related Content

A Policy-Based Team Collaboration

Jae W. Hwang and Shmuel Rotenstreich (2012). *International Journal of e-Collaboration* (pp. 1-16).

www.irma-international.org/article/policy-based-team-collaboration/61402

Risk Management in Distributed IT Projects: Integrating Strategic, Tactical, and Operational Levels

Rafael Prikladnicki, Roberto Evaristo, Jorge Luis Nicolas Audy and Marcelo Hideki Yamaguti (2006). *International Journal of e-Collaboration* (pp. 1-18).

www.irma-international.org/article/risk-management-distributed-projects/1948

Structural Equation Modeling with Factors and Composites: A Comparison of Four Methods

Ned Kock (2017). *International Journal of e-Collaboration* (pp. 1-9).

www.irma-international.org/article/structural-equation-modeling-with-factors-and-composites/182495

Conceptual Linkages: An Analysis of the Organizational Learning, Collaborative Technology and Intellectual Capital Literature

Robert Neilson (2002). *Collaborative Information Technologies* (pp. 24-49).

www.irma-international.org/chapter/conceptual-linkages-analysis-organizational-learning/6669

A New Model and Theory of Asynchronous Creativity

Dorrie DeLuca (2008). *Encyclopedia of E-Collaboration* (pp. 463-471).

www.irma-international.org/chapter/new-model-theory-asynchronous-creativity/12466