IGI PUBLISHING **ITJ 5049**

701 E. Chocolate Avenue, Hershey PA 17033-1240, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.igi-global.com

This paper appears in the publication, International Journal of e-Collaboration, Volume 5, Issue 3
edited by **Ned Kock © 2009, IGI Global**

Enhancing E-Collaboration Effectiveness through the Use of Wikis:
A Theoretical Examination in the Context of Requirements Elicitation

Anand Simha, State University of New York at Buffalo, USA

Rajiv Kishore, State University of New York at Buffalo, USA

ABSTRACT

This article focuses on communication challenges in requirements elicitation (RE) for systems development, and how wikis can enhance the communication process and outcomes in the context of this collaborative task. We focus upon only one specific collaborative task in this article – Requirements Elicitation – and upon one particular e-collaboration aspect of that task – communication among various stakeholders – to narrow the domain of inquiry and bring sufficient depth to our theoretical analysis. The specific variables we focus upon in this article are communications quality and requirements quality. We discuss specific wiki features and provide a brief comparison of wikis with other communication technologies. We then provide a detailed theoretical analysis of how specific wiki features enhance media richness, contextual richness, and organizational memory, and through them, communication quality as well as requirements quality in terms of clarity, completeness, and consistency of requirements specifications. We also discuss some implications and future research directions. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: *Communication Quality; Contextual Richness; E-Collaboration; Media Richness; Organizational Memory; Requirements Elicitation; Requirements Quality; Wiki*

INTRODUCTION

Web-based technologies are playing an ever-increasing role in the modern world and are proving to be both adaptable and extremely beneficial to a range of hitherto unsuspected applications. A recent, interesting development has been that of wiki-based systems, perhaps most familiar to the reader as the system underlying Wikipedia, a Web site that permits anyone anywhere in the world to interact collaboratively and participate in generating creative content towards the build-

ing of an online encyclopedia. The dynamics and success of Wikipedia presents researchers in a wide range of management disciplines with far-reaching possibilities in studying both its underlying dynamics and its applicative possibilities. These management disciplines include e-collaboration, collaboration engineering, knowledge management, social capital theory, structuration theory, information sharing, and communities of practice. Few scholarly works (e.g., McAfee, 2006) have addressed themselves to either a theoretical study of the processes at work in a group that uses a wiki-based interface as its interactive platform or to the question of how wiki-based systems could impact work processes if adapted to structured environments such as a business firm.

Wiki-based systems provide a promising new technology platform for e-collaboration. They possess certain features that bridge gaps existing in other collaboration technologies and address several points that have inhibited the diffusion of other e-collaboration technologies (McAfee, 2006). This article examines the possible ramifications of using a wiki-based system as the collaborative platform in the requirements elicitation (RE) task. In this article, we show that certain features existing in wiki-based systems conduce to improving the effectiveness of a requirements elicitation process.

We focus upon requirements elicitation to demonstrate the collaboration potential of wiki-based systems because requirements elicitation is a high-value, recurring task that requires a high degree of collaboration among systems developers and users (Coughlan, Lycett, & Macredie, 2003). The study of RE is important because several surveys and studies (Browne & Rogich, 2001; Grünbacher & Briggs, 2001; Keil, Cule, Lyytinen, & Schmidt, 1998) have established that misunderstood, ambiguous, and incomplete detailing of requirements remain among the most important reasons behind systems failure. Communication is integral to any collaborative task and is all the more important in the context of an intensely interactive and collaborative task such as RE (Davis, Fuller, Tremblay, & Berndt, 2006). In this article, we focus upon only one specific collaborative task, that of requirements elicitation, and upon one particular collaboration aspect of that task, that of communication among various stakeholders, in order to narrow the domain of inquiry and to bring sufficient depth to our theoretical analysis. We explore how the features of wiki-based systems have the potential to enhance three important variables directly relevant to communication and collaborative work practices that lead to improved outcomes in the requirements elicitation task. These are the media richness, contextual richness and organizational memory that wiki-systems provide.

The RE qualities that are discussed in particular as benefiting from these variables are: the quality of communication within the larger RE team; and the requirements' quality, which comprises of the clarity, completeness, and consistency of the requirements specifications. Certain other outcomes, such as the innovation and creativity fostered by certain novel technical features of wiki-systems; the effects of such factors on employee motivation and performance; and their impact on knowledge transfer, knowledge integration, and organizational learning, are briefly discussed in the final section dealing with implications and possible future research.

This article contributes to the literature on e-collaboration in two significant ways. First, it develops an understanding about some specific features of wiki—a rather recent technological innovation that provides a rich and interactive collaboration platform—that have the capability to enhance communication quality in high-value and intensely collaborative tasks. Second, it provides insights in terms of the mediating variables (i.e., media richness, contextual richness, and organizational memory) which enhance communication quality and collaboration outcome quality in the specific context of requirements elicitation. This is a significant contribution since enhancing the quality of requirements elicitation through the use of wikis could have a major impact on the systems development success.

Antecedents and Consequences of User Satisfaction with E-Mail Systems

Kevin Dow, Alexander. Serenko, Ofir Turel and Jeffrey Wong (2006). *International Journal of e-Collaboration (pp. 46-64).*

www.igi-global.com/article/antecedents-consequences-user-satisfaction-mail/1943?camid=4v1a