Social Media in DMSS System Development and Management

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ABSTRACT

This paper surveys and extends the use of social media technologies as part of decision making support system (DMSS) development and management. In particular, this paper investigates how social media technologies, such as wikis, blogs, micro-blogs and tagging, have been and can be used to facilitate development and management of DMSS, through communication and collaboration. However, the author suggests going beyond simply communication and collaboration. The particular focus is on using an analysis of digital media content to address a range of issues, including using social media content to facilitate capturing project history, doing an analysis of that content to facilitate documentation development, and monitoring content from social media to provide insights into project development. Domain-based characteristics of the text are investigated to discover meaning in social media content.

Keywords: Artificial Intelligence, Blogs, Documentation, Natural Language, Project Management, Sarbanes-Oxley Section 409, Social Media, System Monitoring, Wikis

INTRODUCTION

Social media, such as blogs, wikis, and other Web 2.0 tools, offer users the opportunity to communicate and collaborate about a wide range of issues, including system project development and management. As a result it probably is not surprising that recently, there have been reports from practice that social media tools have been used in system development and management. For example, blogs have been used to communicate project information, wikis have been used to collaborate and communicate project requirements, and collaborative tags have been used to facilitate search of project resources. In particular, a recent survey (Harrin, 2011) found that social media was being used in a number of ways:

- 85% to stay in touch with colleagues
- 60% to communicate with the project team
- 49% to provide project status updates
- 43% to manage
- 41% to communicate with project stakeholders

Purpose of this Paper

However, rather than just using social media for communicating and collaborating, there are additional emerging needs that can be met by analyzing information generated from social media. In some cases, social media replaces conversations with written exchanges, provid-
ing a “text history” that might be used to capture the information exchanged between actors. In particular, using artificial intelligence-based approaches such as those generated by DeJong (1979), Allan et al. (1998), and others, we hypothesize that we can use that content to identify and gather information for system development and management. In addition, we hypothesize that content has certain characteristics that will facilitate our use of that information to discover meaning in the content, such as capturing system development “events” from social media text.

This paper addresses three settings to investigate the types of information available. First, researchers (e.g., Ramesh & Dhar, 1992) have been concerned about capturing a project’s “history of design” that could encompass and be captured in the various phases of the system’s life cycle, ranging from design to development to maintenance and management. Those researchers are interested in finding information that will allow generation of that history of decision making, ultimately, capturing discussions and deliberations leading up to the system development and its many artifacts. As noted by Ramesh and Dhar (1992) these issues typically are of greatest concern in multi-person teams. Since social media is used in multi-person system development projects, information gathered from social media might be used to support design history. Second, some software development methodologies, e.g., prototyping and scrum, typically generate very limited documentation as part of their methodology. As a result, there is a concern for sources of information that can facilitate development of such documentation. Potentially social media could provide information in support of documentation. Third, Sarbanes – Oxley, section 409 requires “real time disclosures” of material changes in projects. As a result, large system development projects need to be monitored to ensure that any large material changes can be ascertained. Social media provide information that could be analyzed and monitored in real time, with a particular focus on finding expressions, potentially emotional, related to system project status, whether good or bad. In the context provided by these applications we will investigate domain-based characteristics of the text, relating specifically to these applications.

BACKGROUND

The purpose of this section is to briefly review some of the key concepts used in this paper, including social media, decision making support systems (DMSS), system development methodologies and intelligent event tracking and monitoring.

Social Media

In this paper social media refers to those relatively recently developed tools, including wikis, blogs, micro-blogs, tags (e.g., Delicious.com), and other Web 2.0-based forms of computing that are designed to facilitate collaboration with easy-to-use software. The term “social media” has been used in a number of settings referring to particular technologies and what those technologies can be used to accomplish. Social media typically refers to internet/intranet-based applications that allow for the development of user generated information and social media provide a forum for users to interact. Social media also typically refers to technology-based media that allows development of on-line relationships. Generally, social media is “cloud-based” and often referred to as “Web 2.0” (O’Reilly, 2005) or when used in a business context, “Enterprise 2.0” (McAfee, 2006).

Social media may be seen as supplementing or replacing more traditional technologies (McAfee, 2006), including mail, email or telephone. Social media can take information from a one-to-one or a limited scale environment and disclose the information to larger numbers of people. Social media generally works to remove asymmetries of information, by making information gathered from different users, more broadly public.

Decision Making Support Systems (DMSS)

Decision Making Support Systems (DMSS) are systems that are designed to support decision
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