

## Chapter 8

# Enhancing Productivity through Social Computing

**J. Alfredo Sánchez**

*Universidad de las Américas Puebla, Mexico*

**Omar Valdiviezo**

*Universidad de las Américas Puebla, Mexico*

### ABSTRACT

*This chapter posits that social computing applications, when appropriately combined, provide opportunities to facilitate organizational communication and collaboration, and ultimately, to enhance productivity. The authors illustrate this view by discussing ongoing work and initial experiences with the development and deployment of a number of social computing concepts and platforms. They particularly focus on the confluence of social bookmarking and social networks to enhance productivity in academic settings, as well as on the use of social networks for coordinating and managing group projects. They also discuss how social networks in immersive environments can result in opportunities for learning and training that may have a positive impact on productivity. They developed social computing prototypical applications for each of the areas they are exploring. Based upon observation of users and feedback obtained from them, they conclude that it is possible and desirable to take advantage of the collaborative nature of social computing applications so that participants engage in productive activities for the benefit of their organizations.*

### INTRODUCTION

Millions of people around the world spend time communicating with their contacts that are registered as users of social computing applications, most notably social networks and instant messaging, but also increasingly immersive multi-user

environments, wikis, blogs and other applications that provide social context for user activities. A few of these applications can naturally be regarded as tools that are oriented to supporting or enhancing productivity. These include collaborative editors, some wikis, and project management environments. Other applications, however, often are seen merely as recreational and are the subject of arguments on whether organizations

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should discourage their use in productive settings. Social networking, instant messaging and micro-blogging applications are salient examples of this questioned category. A significant number of organizations have banned social networking applications from the workplace over concerns that employees are wasting time on them when they should be working (see e.g. Malkin, 2007). In this chapter, we posit that social computing applications such as social networking and collaborative tagging, when appropriately combined, present opportunities to facilitate organizational communication and collaboration, and ultimately, enhance productivity.

In order for social computing to have a positive impact on the efficacy, effectiveness and satisfaction of participants of group activities, both human and technological issues need to be addressed. On the human side, critical issues include motivation and incentives, training, trust and group dynamics. On the technology side, user interfaces and collaboration environments that are empowering yet secure and privacy-protecting are key. But beyond that, supporting mechanisms are needed that make it possible for users to take advantage of the wealth of knowledge represented by vast collections of documents and the relationships and interactions among their authors and participants of group activities.

We illustrate our views by presenting ongoing work and initial experiences with the development and deployment of a number of social computing concepts and platforms. In particular, we focus on the confluence of social bookmarking and social networks to enhance productivity among knowledge workers, as well as on how social networks may leverage the coordination and management of group projects. We also discuss our explorations of immersive environments and how interactions among multiple users can result in opportunities for learning and training that may have a positive impact on productivity.

The remainder of the chapter is organized as follows: Current related work on productivity and

social computing is summarized in the following section to provide an overview of the field. Next, our work that addresses productivity issues is discussed in three sections: (1) project management and coordination based on social networks, (2) social computing for supporting academic productivity, and (3) multi-user immersive environments for learning and training. We discuss the broader implications of social computing on organizations and productivity, and present conclusions that can be derived from our work.

## **BACKGROUND**

In very simple terms, productivity is a measure of output per unit of input. In economic terms, productivity is crucial as the growth of productivity determines the growth of a country's material standard of living (Field, 2008). Concerns over the increasing popularity of social computing and its impact on productivity have prompted discussion and analysis from multiple perspectives and research groups. In this section we sample salient viewpoints and work that examines how various forms of social computing is affecting productivity. These forms include social networks, collaborative tagging, and multi-user virtual environments. We start by reviewing efforts to study the aspects of social computing technologies that may enhance productivity, as well as to provide forums for discussion and analysis. Next we focus on learning as an area of opportunity for social computing applications. Then we consider social bookmarking (or collaborative tagging) and its potential to support knowledge-intensive activities. We then center our attention on immersive virtual environments, which typically have been used for recreational purposes, and refer to work intended to introduce professional and productive applications into these environments. Finally, we review briefly work aimed to help organizations take advantage of social networks in the workplace.

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