Chapter 7

From Motivation and Self-Structure to a Decision-Support Framework for Online Social Networks

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ABSTRACT

Data collected from online social networks offers new possibilities for supporting organizations’ daily activities. It is also common knowledge that the opinion exchange in online social networks provides a decisive contribution in decision making. It is, thus, necessary to review and bare present the motivations by which people engage in online social network and the ways in which firms can make use of such motivations in order to take advantage of online social networks as information sources for decision-making support. To do so, the authors of this chapter developed the decision-support social networks to extract such information, which encompasses the intertwined use of human interaction and network structure by combining human capabilities, social network analysis (SNA), and automatic data mining. In this chapter, a brief summary of the performed case studies over the proposed information model is also presented.

INTRODUCTION

The participation in online social networks have become extremely popular, corresponding to more than two-thirds of the global online population. In fact, social networking and blogging account for nearly thirty percent of all time spent on the Internet (Mander & McGrath, 2017), suggesting that online social
networks have become a fundamental part of the global online experience (Benevenuto, Rodrigues, Meeyoung, & Almeida, 2009) and has introduced a new organizational framework for online communities and, with it, a vibrant new research context (Boyd & Ellison, 2008).

The use of social web data offers new possibilities for supporting organizations’ daily-based activities. According to Pang and Lee (2008), “what others think” has always been an important piece of information in decision-making for almost everyone. It is also common knowledge that family and friends assume, and not in rare occasions, a decisive role in individual decision-making (choosing the color for a new car, the next holiday destination, a gift for the spouse/husband, etc.). The weight of such opinions may well match or overcome other criteria thought to be more rational or rigorous. This situation is not awkward or inexistent in firm management, as polls and market studies on costumer habits or opinion-based preferences are often incorporated into corporate decisions. The social web has made possible, as never before, to directly collect the opinions and experiences (personal and professional) of a wide range of people without any “formal inquiries”, thus allowing to change the way we look at the whole decision process. Tollinen, Jarvinen, and Karjaluoto (2012), argue that social web monitoring, rather than using explicit surveys, provides more objective results on people’s intentions. However, according to Murugesan (2010), several issues are still open and unsolved, like the management of the social web content (that grows day by day), its heterogeneity and the effectiveness of its extraction, just to mention a few. In addition, as reported by Batagelj, Doreian, Ferligoj, and Kejzar (2014), the majority of specific social networks (such as enterprise-based) are context limited and ignoring such contexts can impose large constraints on understanding the underlying phenomena or situation.

It is, thus, necessary to review and bare present the motivations by which people engage in online social network and the ways in which firms can make use of such motivations, in order to take advantage of online social networks as information sources for decision-making support. To do so, we developed an information model – the decision support social networks – to extract decision-making information from the interaction of people involved in online social networks (Antunes & Costa, 2011, 2012b), which allows different working modes, ranging from very small to very large groups, without any constraint neither on how the group will organize itself nor on how it will be constituted. The idea behind such information model is that it remains an \textit{ad hoc} self-organized structure, formed by people who do not have to belong to a specific firm, motivated to contribute to problem-solving (whether by firm mechanisms or by an independent self-motivation).

In this paper we take a step forward in a research field that is recognized to be in its early stages (Davenport, 2014), by providing actual implementations of the proposed information model, to extract, process, structure and analyze the collected data from context-specific online social networks. Such framework incorporates the intertwined use of human interaction and network structure, by combining human capabilities, Social Network Analysis (SNA) and automatic data mining. In the next section, a definition of online social networks is elaborated, as well as a deeper understanding of social networking phenomena, a classification and building blocks. The section ends up with the concept of group or community. Motivation to participate, language and the importance of context is also reviewed when using online social networks for decision-making purposes. After that, the decision support in social networks is deepened and the developed framework and the way to implement it is presented. Three examples of usage of the framework are then mentioned. The conclusions of these examples are also presented. Naturally, the paper ends with reference to future research and final remarks.