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A systematic mapping study on using social media for business process improvement

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ABSTRACT

Studies involving social media have focused on analyzing how companies can propagate information or how the social media tools can affect user behavior. Few studies have paid attention to User-Generated Content and its application to the improvement of business processes, even though there has been an increase in reported cases in recent years. Through a systematic mapping study of the *Ebsco*[®] database, we looked for articles that addressed this issue of user-generated content since its first appearance of up to 2015. In a first view, we confirmed the paucity of research related to this theme, even with the large increase of social media studies. As findings, we identified some important research trends towards public organizations using the content created by citizens to improve public services, as well as companies using social media tools to improve innovation processes. On the other hand, we identified gaps in the research, such as in journalism, engaging readers as information providers, and social media, being used for the improvement of the e-learning process.

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1. Introduction

Internet access has become easier in recent years due to improvements in the infrastructure of telecommunications. The Internet, previously used only for military purposes, grew in its technical capabilities and it penetrated into different territories once it was released to the general public (Wachter, Gupta, & Quaddus, 2000).

As this developed and spread, innumerable applications, such as blogs, sharing platforms and social media were developed (O'Reilly, 2007). Thus, according to Kaufman (2012), the development of social media is perhaps one of the greatest events in recent years, as it represents a new means of organization in contemporary society. Fialho and Lütz (2011) emphasize that these kinds of networks are becoming increasingly widespread and play a highly important role among the options for communication and information on the Internet.

Meanwhile, Cross and Thomas (2009) and Kirkpatrick (2012) report that users are creating new ways to use social media, affecting both personal relationships as well as relationships with

businesses and governments. This is the case of social media that has gained an important place over the years, as, for example, Facebook[®], LinkedIn[®], and Twitter[®], which permit organizations to have their own pages and applications on the social network itself. As the popularity of social media has grown, many studies have been mounted about its potential for disseminating information, whether information of public interest, advertisements or even rumors. However, apparently very little has been researched about the information generated by social media users for the improvement of processes within organizations.

This article fits in at this point. Exploiting the theme of user-generated content in social media, we conducted a systematic mapping study, aiming to point out the possible research opportunities and research trends. Specifically, we conducted research on how organizations have been using content generated by social media users to improve their processes.

This question becomes particularly important due to advances in web 2.0 that promoted greater interaction between people and organizations (Pacheco, Kuhn, & Grant, 2010; Rowe, 2015). With the possibility of two-way communication, there have been numerous attempts to pay attention to clients who wish to give some sort of feedback to companies or even make suggestions for new products (Andriole, 2010; Baumer, Sueyoshi, & Tomlinson, 2011; Nascimento, Freitas, & Silva, 2014).

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The remainder of this paper is organized as follows. The second section explains what a systematic mapping study is. The third deals with the procedures adopted in this study. The fourth and fifth present quantitative and qualitative analysis of the articles selected. Finally, the sixth presents final remarks on the study.

2. Systematic mapping studies

The evidence-based paradigm has had considerable success in terms of influencing research and practice in clinical medicine. In turn, the ideas and the practices involved have been adopted and adapted by many other disciplines that depend upon empirical data for purposes such as building theories and obtaining an understanding of practice, in education, psychology and many of the health-related and social sciences (Kitchenham, Budgen, & Pearl Brereton, 2011).

In this paradigm, the systematic mapping studies (SMS) method, also known as 'scoping studies', goes through existing primary reports, reviews them and describes their results. Compared to common literature reviews in any research project, a systematic mapping has several benefits, as follows: a well-defined methodology that reduces bias; and a wider range of situations and contexts that allow more general conclusions (Kitchenham et al., 2011). The SMS also has several drawbacks, the main one being the considerable time and effort required to cover a database.

According to Kitchenham, Budgen, and Brereton (2010), the research questions in systematic mapping are general as they aim to discover research trends (e.g.: publication trends over time, topics covered in the literature). It also provides a wide overview of a research area to determine evidence in a specific topic and gives an indication of the quantity of this evidence (Petersen, Vakkalanka, & Kuzniarz, 2015).

The typical mapping study process, illustrated in Fig. 1, is composed of five steps: to define the research question; conduct the search in the sources; select the papers that apply to the research question; classify the papers; and extract data and map studies to complement the data categorization and summarization.

3. The mapping process

This research aimed to analyze studies in social media that contribute to the improvement of business processes by executing a systematic mapping study. According to Kitchenham et al. (2011), this type of study examines a broader topic and classifies the literature in that specific domain, using high level research questions.

A fundamental characteristic of this type of research is that its execution is based on a protocol, as reported by Budgen, Turner, Brereton, and Kitchenham (2008). Additionally, it can disclose

research trends, since a number of journals are covered in the same study (Kidman & Papadimitriou, 2012; Papadimitriou & Kidman, 2012).

Our mapping study protocol was based on guidelines provided by Budgen et al. (2008), Kitchenham, Dyba, and Jorgensen (2004) and Petersen, Feldt, Mujtaba, and Mattsson (2008) and on good practices from studies conducted by Kitchenham (2010) and Kitchenham et al. (2011).

Thus, the process applied to conduct our systematic mapping study involved the following activities: (i) defining research questions, (ii) conducting the search for relevant primary studies, (iii) screening papers, (iv) key-wording of abstracts, and (v) extracting and mapping data. Each activity produced an intermediate outcome, the concluding result being the mapping study. The following sections present details on how each activity was carried out.

Our overall goal was to investigate the research trends focused on how the use of social media could improve business processes. From this, we aimed to direct further research towards improved communication among researchers and practitioners.

In searching for relevant primary studies, we used key words. Table 1 depicts the search string devised from combining the keywords. In order to exclude or include similar terms, as in the case of the composition of the keywords 'social media', which was also found as 'social network site', 'social networking site' and 'online social network'. Thus, we used the Boolean operator '*' to guarantee the inclusion of some terms that could also be found with suffixes, for example in their plural forms.

Afterwards, we used these search strings on the Ebsco® database in order to cover a very wide area of academic fields with indexed content from more than 8500 journals from the year of 1975–2015. This database is designed specifically for academic institutions and is recommended for multidisciplinary research studies such as ours. It allows articles from various fields of study to be searched, thus enabling a comprehensive systematic review of the academic community (EBSCO, 2016). It is worth mentioning that Ebsco® searches articles from Emerald®, the Sage®, Blackwell® and Science Direct®, which are in themselves databases, thus demonstrating Ebsco®'s scope and potential for a systematic mapping study. This database has search engines that enable the identification of occurrences of the terms defined both in the title and abstract of the papers. Furthermore, we placed no limits on the date of publication in order not to restrict the scope of the mapping study.

In order to determine which primary studies were relevant to our research question, we applied a set of inclusion and exclusion criteria to each retrieved paper. The inclusion criteria (IC) were:

1. for papers reporting identical studies, only the most recent was selected;

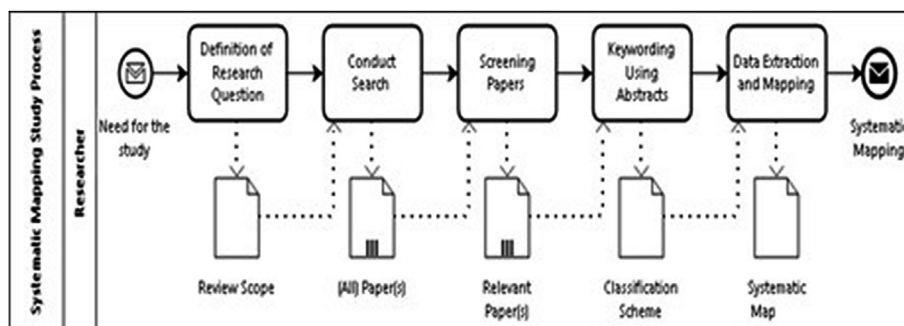


Fig. 1. Systematic mapping study process.

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