Chapter 15
Defining the Factors that Effect User Interest on Social Network News Feeds via Fuzzy Association Rule Mining: The Case of Sports News

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ABSTRACT
Social networking became one of the main marketing tools in the recent years since it’s a faster and cheaper way to reach the customers. Companies can use social networks for efficient communication with their current and potential customers but the value created through the usage of social networks depends on how well the organizations use these tools. Therefore a support system which will enhance the usage of these tools is necessary. Fuzzy Association rule mining (FARM) is a commonly used data mining technique which focuses on discovering the frequent items and association rules in a data set and can be a powerful tool for enhancing the usage of social networks. Therefore the aim of the chapter is to propose a fuzzy association rule mining based methodology which will present the potential of using the FARM techniques in the field of social network analysis. In order to reveal the applicability, an experimental evaluation of the proposed methodology in a sports portal will be presented.

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INTRODUCTION

The number of social network users is increasing dramatically which creates an appealing market for the companies therefore it’s expected that most of the companies will be using social media within a few years. Companies can use social networks for efficient communication with their customers and potential customers, for instance news feeds is an option for the companies to push the content to the target audience. Besides its high market potential, the value created through the usage of social networks mainly depends on how well the organizations use these marketing tools. If it’s not managed properly the usage of social networks can be a waste of time and energy. Therefore revealing the factors that increase the value created through the social networks is crucial; unfortunately still there is not a proper way to reveal these factors. The objective of this study is to propose a methodology which will reveal the factors that affect the value of social networking usage. In order to reach to this objective the impact created through utilizing news feeds feature of Facebook will be investigated. News Feeds feature, when initially released by Facebook on 2006, was designed for individual uses to gather new information that users post about themselves on their walls. Today, the content that is shared on the Facebook page is automatically posted to the users who liked the page. The content posted on the page can be video, image or a link to another webpage. Although news feeds future is originally designed for individual users, it enables companies to inform customers about the developments in the company and get their direct comments on this information; therefore, it’s widely used by the companies as a way of communication with the customers. The users of the social network can do various activities with the posted content, they can simply push the like button indicating that they have a positive attitude towards the content, or they can write their comments with their own words and finally they can share the content with their circle of friends. These three activities can be assumed as indicators of user interest towards the post. These activities are also counted and published with the post content so that the users can see his/her friends who showed interest on the post or which post gets more attention by the general audience.

Fuzzy Association rule mining (FARM) is a commonly used data mining technique which focuses on discovering the frequent items and association rules in a data set. FARM technique can be a useful tool for determining the factors that affect the value of social networking usage. Therefore the aim of the chapter is to present the potential of using the FARM techniques in the field of social network analysis. News feeds feature of social networks will be the subject of the real world example, and the factors that affect the higher user interest will be examined. The results of such a study provide Facebook page owners the information about which type of news to publish and when, in order to generate the highest interest from the users. To the best of our knowledge this will be the first application that uses FARM on social media and news feeds. The remaining of the chapter is organized as follows; in Section 2, the proposed methodology is given. In section 3, a real world numerical application of the proposed methodology in a sports portal is represented. Finally, conclusion and further steps are discussed in conclusions.

LITERATURE REVIEW

In literature various studies focuses on the user interest on social media. These studies can be grouped in to three classes. The first group focuses on finding social media that suits user needs and classified the social media with this objective (Zhu