

Guest-editorial

Special issue on knowledge management of web social media

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Web social media includes computer-mediated tools that allow people to create, share or exchange information, ideas, pictures, and videos in virtual communities and networks. Web social media is defined as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content” [1]. Furthermore, web social media depends on mobile and web-based technologies to create highly interactive platforms through which individuals and communities share, co-create, discuss, and modify user generated contents. They introduce substantial and pervasive changes to communication between businesses, organizations, communities, and individuals [2].

Web social media presents challenging knowledge management issues at all levels – for individuals, organisations, communities, businesses and governments. Knowledge management is the process of capturing, developing, sharing, and effectively using organisational knowledge. Web social media is different from traditional or industrial media in many ways, including quality, reach, frequency, usability, immediacy, and permanence. Such characteristics have made knowledge management on web social media more challenging than ever before. Breakthroughs need to be made on many technological bottlenecks, such as

- How to gain the capability of dealing with an incredible volume of information;
- How to overcome the difficulty of extracting relevant knowledge from the information deluge;

- How to not only manage information but also make it productive; and
- How to transit valuable information into business value.

The challenges and potential benefits of knowledge management of web social media have attracted much attention from the researchers to make many great achievements in recent years.

Targeting on the challenging issues knowledge management of social media, consisting of five articles, this special issue is focused on basic concepts and principal algorithms suitable for investigating massive social media data. The special issue has discussed theories and methodologies from different disciplines such as computer science, data mining, information retrieval, machine learning, and social network analysis. The discussions in the special issue encompass the theoretical basis and related tools to formally represent, measure, model, and mine meaningful patterns from large-scale social media data.

The articles in the special issue are arranged as follows.

Twitter as a typical platform of social media has grown significantly in the past years. While Twitter provides valuable insights for individual users and companies, it has also presented technical challenges to data scientists for data collection, processing, and analytics. In the first article, entitled “Performance evaluation of Twitter datasets on SQL and NoSQL DBMS”, Franklin Leung and Bing Zhou argued that traditional relational databases are not able to provide

acceptable efficiency in such tasks on social media data, and presented an empirical study on four popular SQL and NoSQL database systems using massive twitter datasets. The study has significant contributions to knowledge management in social media as it provides a guideline for selection of efficient database systems according to user requirements.

The second article, entitled “A topic-based sentiment analysis model to predict stock market price movement using Weibo mood”, by Wenhao Chen, Yi Cai, Kinkeung Lai, and Haoran Xie, has introduced an innovative approach to predict the stock market in China by analyse sentiment and opinions expressed on WebChat, a typical social media platform commonly used in China. The authors argued that “public mood is correlated with economic indicators and financial decisions are significantly driven by emotions”. With the proposed approach, they have the argument supported by empirical experiments – the results demonstrated that the sentiment captured from social media has potential influence to stock market. The study has promoted our understanding of the patterns between social media and finance and holds potential, significant contributions to knowledge management in the related domains.

The third article, entitled “A topical diversity-based approach to detecting similar question groups from collaborative question-answering archives”, by Tianyong Hao, Chengtao Li, Wanqing Liang and Yingying Qu, has studied a fundamental problem in social media knowledge management; detection of similar questions. An innovative approach is proposed to automatically detect similar questions based on the diversity of topics in the questions. Such an approach will help us gain the capability of dealing with an incredible volume of information, and will improve the performance of social media analysis in the tasks such as hidden community detection and public opinion mining.

The fourth article was contributed by Omar Ali, Jeffrey Soar, Jianming Yong and Xiaohui Tao, with a title of “Factors to be considered in cloud computing adoption”. The article has discussed factors to be considered for adoption of cloud computing in Australian regional municipal governments. In the study, massive amount of data collected from interviews with IT practitioners in Australia’s regional municipal governments has been analysed. Major factors, such as Internet connectivity, Internet speed, availability, reliability, data storage location, security, data sovereignty, cost, integration, data backup, provider dependabil-

ity, employees’ knowledge, and transportability, have been identified. Such interesting scientific findings will help regional municipal governments in adoption of cloud computing. The study is a great demonstration of how to transit valuable information into business value.

Finally, the last article, entitled “An intelligent recommender system based on predictive analysis in telehealthcare environment”, by Raid Lafta, Ji Zhang, Xiaohui Tao, Yan Li, Vincent S. Tseng, Yonglong Luo, and Fulong Chen, has presented an intelligent recommender system for public health care. Data mining techniques are adapted to predict patients’ health conditions and make recommendations for necessity of medical screens, aiming at saving time and personnel cost. The proposed system was evaluated by empirical experiments using a real-world dataset, and the experimental results are promising. The study makes a contribution to the development of intelligent recommender systems using predictive data mining techniques. The predictive intelligent system has also made an excellent paradigm for not only managing information but also making it productive.

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References

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