Australasian Journal of Information Systems
2015, vol. 19, pp. S1-S3

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Business Analytics Editorial

Editorial for the Special Issue on Business Analytics Applications

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The need for organisations to make sense of their data has never changed. Data has always played a role in helping organisations improve their operational efficiencies, maintain customer relationships, and seek maximum returns through different targeted strategies. From the early days of aggregated data reports, to dashboards and business intelligence, the complexity in the volume of data to analyse and the need for complex insights to influence decision-making has organisations shifting their interest and focus on analytics.

Analytics refer to the use of a variety of computer technologies, both in terms of hardware and software, to analyse massive amount of data for complex data patterns and data characteristics. Business analytics broadly refers to the application and customisation of these techniques to effect the positive outcomes sought by organisations. The underlying algorithms and techniques are based on data mining and machine learning but business analytics focus on the practical application of these. In addition to the technological aspects of analytics, "business analytics" also builds on the foundation of information systems theory that enables the raw technology to be meaningfully contextualised and applied to solve the real-world business problem.

In this special issue, we are delighted to have a diverse set of papers covering a broad spectrum of business analytics as an emerging discipline. Starting from the information systems perspective, we have two complementary papers. The first by Cosic et. al., proposed a business analytics capability framework designed from a resource-based view and a thematic content analysis of the existing business analytics literature. The aim of the framework is to enable academics and practitioners understand an organisation's business analytics initiatives and to determine the relative importance of business analytics within the organisation. The proposal is complemented by Yeoh et. al., where a BI and analytics diagnostic framework was proposed to allow organisations evaluate the effectiveness of their BI and analytics initiatives. A key outcome from Yeoh et. al. is an online toolkit that includes a comprehensive survey instrument to allow other organisations to understand their own BI and analytics readiness.

The next two papers discussed business analytics from the computer science perspective, focusing more on the underlying algorithm that enable business analytics. Alahakoon suggested at a "new user" model for interactive product retrieval aimed at solving issues in product recommendation on e-Buying systems. The proposed solution allows the recommender to avoid null retrievals, over-retrievals and unsatisfactory retrieval of product recommendations thus, improving the overall e-Buying experience. However to get customer experience right will require more than just good recommendations. It's also about understanding what customers feel about your product and that's where text analytics come into play. The paper by Nathawitharana et. al. tackled this issue by a new algorithm that improves on term overlap detection. With improved accuracy in term detection, text analysis

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such as clustering will be more effective. In the paper, Nathawitharana et. al. showed that their GSOM hierarchical clustering algorithm are able to achieve good intra-cluster difference for distant categories when the their new algorithm is applied.

Between these two perspectives, the remaining papers shared how various problems are solved through the effective use of analytics and along the way, present application exemplars of business analytics. Asefi et. al. described how their optimisation model enables the cost of waste management at a municipal in NSW, Australia to be minimised by reducing the total cost of transportation and facility establishment for different types of waste. Singh and Rumantir analysed EFTPOS data using both clustering and classification to derive a set of business rules that allows them to easily recognise different types of retailers and therefore, allow tailored strategies to be applied by the banks when marketing EFTPOS products to retailers. Although minimising cost and maximising market opportunities is typical of any business, analytics could also be applied to save lives such as the work reported in Shahparvari et. al. who used a multi-objective optimisation model to help create a decision support system for bush fire evacuation, shelter assignment and JIT allocation of resources to enhance the capacity of fire services agencies. Lastly, no discussion of business analytics would be complete without the mention of "big data", which was presented in the paper by De Silva. This case study paper unpacks the inertia facing the healthcare industry in tapping into the potential of its big data and suggests a solution to improve the big data analytics adoption rate by discussing the solution from the diabetes screening case.

We like to end this editorial by mentioning the reviewers who worked tirelessly to the timeframes of this special issue, many whom have gone the extra mile to get reviews completed on very short notice. We are deeply appreciative of their contributions and they are formerly acknowledged here.

- Siew Fan Wong, Sunway University
- Hassan Hijazi, NICTA, Optimisation Research Group
- Greg Richards, University of Ottawa
- Michael Gendron, Central Connecticut State University
- Prem Chethri, RMIT University
- Asanka Foneska, Equipsuper Pty Ltd
- Md Zahidul Islam, Charles Stuart University
- Masoud Mohammadian, University of Canberra
- Kali Nepal, Deakin University
- Delwar Akbar, CQUniversity Australia
- Mahabub Rahim, Monash University
- Jayantha Rajapaksa, Monash University
- Don Kerr, The University of the Sunshine Coast
- Sumith Matharage, Crown Entertainment
- Yee Ling Boo, RMIT University
- Qing Huang, La Trobe University
- Grace Rumantir, Monash University
- Ta-Tao Chuang, Gonzaga University
- Maura Atapattu, Queensland University of Technology
- Susan Keller, La Trobe University

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- Martin Dick, RMIT University

- Daswin De Silva, La Trobe University

- Ravi Seethamraju, The University of Sydney

- Tim Turner, UNSW Canberra at the ADFA

Lastly, we hope you enjoy the papers in this special issue. We had a wonderful time putting the papers together and none of these is possible without the on-going support of the Editor in Chief, Associate Professor John Lamp, whom we sincerely thank for accepting this special issue proposal and the on-going support rendered throughout.