Editorial

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Biographical notes: Noppon Choosri is currently the Program Director in the Software Engineering Program of the College of Arts, Media and Technology, Chiang Mai University, Thailand. He received his BSc in Computer Science, and MSc in Information Management from the Mahidol University, Thailand, and PhD in Computing Science from the Staffordshire University, UK. His research and practices are mainly focused on investigating enterprise ICT and software solutions to enhance healthcare operations. He has experience incorporating projects with various medical societies including rehabilitation, nutrition, pediatric, palliative cares, surgery, tropical diseases, and family medicine.

Shuang Cang is a Professor in Information Systems and Management at the Northumbria University, UK. She has both industry and academic experience and worked for a leading UK software company. She also worked in the UK Government Research Laboratory and Central Government Department as a Senior Statistician/Senior Analyst, where she applied statistical and pattern recognition techniques to solve real and complex problems. She worked in the Department of Computer Sciences at the Exeter University and the University of Wales, Aberystwyth. Then she worked at the Bournemouth University where she was responsible for three large EU projects.

An enterprise system is a complex system where many parties, stakeholders, service providers work together and interact in tasks and processes. An enterprise information system (EIS) acts as a portal of cooperation offering an integrated information and communication technology (ICT) architecture and information services that facilitate effective co-working environment among stakeholders. Although the term 'EIS' has long been introduced and practically adopted by many global large organisations, many issues are remaining for academic societies to address the new research questions, and

ultimately to enhance the performance of the EIS. The fact is evolution of EIS has passed through a long journey from the first generation in 1960s when the EISs mostly consisted of stand-alone functional information systems (Romero and Vernadat, 2016), whereas the contemporary management theory underpinning an architecture of EIS is shifting from a closed to an open system (Mellah et al., 2008).

Furthermore, the business landscape is currently changing under the influence of five significant megatrend changes including:

1   demographic and social changes

2   resource scarcity

3   inequalities

4   volatility, scale, and complexity

5   enterprising dynamics (Esposito and Tse, 2018).

This poses an implication to revisit the role, specification, application and measurement metrics of EIS. Moreover, the advent of the newly emerged ICT and paradigms such as cloud technology, internet of things (IoTs), Industries 4.0, big-data analytics trigger many new opportunities and challenges to the way information systems should be constructed or retrofitted. For example, IoTs are widely used in enterprise information management to realise multi-target locating through automatic identification and sensing technologies (Ma and Wang, 2016).

This special issue is particularly focused on the EIS research in the angle that complies with the core theme of the *International Journal of Agile Systems and Management* (*IJASM*) in which the qualitative factors involved the agilities and responsiveness, competitiveness and management of systems are explored with different cases. To achieve high level of agility, the EISs are expected to have a self-organising property to adapt to the functional and technical developments changes and synchronise the process of the third parties without changing business application (Mellah and Drias, 2016).

The manuscripts are primarily invited papers selected from contributions to the 10th International Conference on Software, Knowledge, Information Management & Applications (SKIMA 2016) held in Chengdu, China on 15–17 December 2016. The guest editors together with the reviewer teams have identified four manuscripts that meet the selection criteria. These invited papers have been revised and reviewed extensively from the original conference version to meet the stringent novelty and significant knowledge contribution expectation of *IJASM*.

Demand fluctuation is one of the most challenging problems in logistics where manufacturers are under a pressure to respond quickly and flexibility to satisfy customers' demands to gain competitive advantages. Liu et al. explore the solution to resolve the demand changes of the customers such as types of products, quantities and delivery times. The authors employ an extension of job shop mathematical model called reconfigurable machine tools (RMTs) to conduct the impact analysis. To improve the ability of capacity adjustment, the authors also combine the operations of RMTs with the classical proportional integral derivative (PID) controller. Employing this model to the EIS will assist enterprise coping with customers' volatile demands more effectively.

Laval et al. propose an EIS framework that incorporates agility as an essential property supporting improvement. The proposed framework aims to define and evaluate the agility of an EIS to assist both software engineers and business managers in reengineering EIS. The proposed framework can be used to structure the different existing metrics on agility according to the improvements needs and the intrinsic characteristics of an information system. The research has an ultimate goal to answer the question: how to measure agility as a key performance indicator for an existing EIS, with an improvement project perspective.

Sinthamrongruk et al. investigate a solution for enterprises that have the core business in skilful service delivery. The challenge is to find an optimum solution allocating staff to customers that not only satisfy qualification requirements but also use the minimum cost and satisfying time-slot feasibility. The research uses a case study of the homecare staff scheduling problem (HSSP) and strategically tackles the problem by dividing an entire problem into sub-problems and then finding solutions with priority for route scheduling, resource selection and local improvement

Choosri et al. explore the EIS solution in the non-business domain. EISs are typically recognised as a tool to offer monetary advantages to business enterprise, the author team develops an ICT enterprise framework for medical networking to help people in the rural area gain a better quality of cleft lip/palate treatment. The manuscript presents practical requirements identified from healthcare providers, and proposes an agile and effective ICT architecture. The manuscript also reports the current progress of implementation including two applications that have been developed to address the high priority issues of collaborative networking. One application supports data sharing for medical teams, and the other application facilitates patients to access better medical services.

The guest editors would like to thank all the authors of this special issue for contributing the high quality papers. We would also like to thank the referees who have critically evaluated the papers. Finally we hope readers will share our joy and find this special issue very useful.

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