Editorial

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We are very pleased at seeing this special issue on 'Information technology and complexity management' of *International Journal Information Technology and Management*. Over the past several decades, information technology and complexity management has attracted a great deal of attention from both researchers and practitioners. Our call for papers cited substantial and important growth in the application of quantitative analysis to interdisciplinary problems arising in information technology and complexity management. We seek to provide the primary forum for both academic and industry researchers and practitioners to propose and foster discussion on state-of-the-art research and development quantitative analysis in the areas of information technology and complexity management.

This special issue includes the broad coverage we were seeking, with theoretical research combining barcodes and RFID in a hybrid solution to improve hospital pharmacy logistics processes, a modelling work on emergency resources storage region division based on two-stage stochastic programming, an empirical paper on comprehensive evaluation of marketing channel risk of beverage enterprise on the basis of GRA-fuzzy-AHP, a practical application on earthquake emergency evolution and contingency decision using system engineering approach, a paper discussing interplay among software volatility, complexity and development outcomes: evidence from open source software.

Romero and Lefebvre examine empirical evidence on the opportunities for improving internal logistics related to hospital pharmacies. Their work focus on two objectives:

1 to assess the current situation

2 to analyse the benefits derived from the adoption of a track-and-trace solution based on barcodes and/or RFID.

The field research was conducted in four North-American hospitals and in five external organisations related to the management of medicines. Quantitative and qualitative data was analysed primarily by content analysis and process mapping. The study identifies five levels of medicine packaging and examines the corresponding information that is required at each one. Results demonstrate that the relative importance of the benefits derived from a track-and-trace system differs depending on the chosen configuration: based on barcodes alone, RFID alone or hybrid configurations.

Wang et al. analyse the necessity of regional emergency resources storage and find that the region division problem is of the first importance in the regional emergency resources storage system. A two-stage stochastic programming model and algorithm are proposed to solve this problem. Finally, a case study is presented to highlight efficiency of the proposed solution strategy.

Xu et al. examine risk evaluation index system of marketing channel risks of beverage enterprises. Comprehensive evaluation model of marketing channel risks of beverage enterprises based on GRA-fuzzy-AHP method is built, qualitative indexes are quantised by using fuzzy mathematics method, and the index weight is determined by using analytic hierarchy process (AHP) method. On this basis, this paper evaluates the marketing channel risks of beverage enterprises comprehensively by using grey relational analysis (GRA) method. The empirical analysis result proves that the risk evaluation index system of beverage enterprise marketing channels is effective and the evaluation model is feasible, reasonable and scientific.

Li et al.'s work extracted unexpected incident attributes by the approach of multi-case study to describe the Great East Japan Earthquake structurally from the event type, the key attributes, the secondary attributes, the environment attributes and the hazard assessment attributes. On the basis of the structural description, Li et al. adopted a system engineering approach, an extended event graph, to describe and analyse this earthquake and its event evolution as well as associated contingency decisions. Some pertinent countermeasures are also presented for reference of similar emergency event evolution in the future.

Colazo posits a mediating role of software complexity in the association between software volatility and different software development outcomes. Empirical tests using data from 326 open source software projects support such a partial mediating role of software complexity in the association between software volatility and development outcomes. Archival data is tested using an ordinary least squares mediated model. This work uses productivity, defect count and development speed as dependent variables.

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