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## **Editorial**

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It gives us a great pleasure to welcome you to this special issue of *International Journal of Business Information Systems*. This issue is dedicated to the publication of selected papers researching simulations and business modelling aspects of ICT domain from the European Mediterranean Conference on Information Systems (<http://www.emcis.org>) (2008). In this issue there is an eclectic presentation of research covering topical issues associated with information systems.

This issue starts off with Chahal and Eldabi who have discussed system dynamics (SD) and discrete event simulation (DES) as the two established simulation techniques for simulating the dynamics of a system. They claimed that both have been widely used in modelling business decisions. Their paper presents meta-comparison between the two approaches based on literature survey. Upon reviewing the existing literature it has been identified that existing comparisons could be classified under three main perspectives: systems perspective, problems perspective and methodology perspective. The nature of system and nature of problem have been argued as primary factors for deciding modelling methodology. Therefore SD and DES comparisons have been classified on the basis of systems, problems and inherent aspects and capabilities of both modelling methods. It has been argued that development of sound models need fit between system, problem and methodology. The success of model depends on its technical soundness as well as its successful implementation. In order to develop successful models this vision has been further extended to incorporate stakeholders, resources and time.

Ali et al. then have claimed that, discounted cash flow (DCF) is the most accepted approach for company valuation. However, the DCF approach, which is commonly used for traditional companies valuation, presents a number of serious weaknesses within the internet companies' context. One of these weaknesses is tackling the uncertainty that characterise future cash flows of these companies. Specifically DCF assumes that future cash flow streams are highly predictable. The effects of uncertainty are therefore tackled implicitly by discounting the expected value of the cash flows at a risk-adjusted interest rate. However, under uncertainty, future cash flows of these companies can no longer be characterised by a single value but rather by a range of values of its possible consequences. Their paper looks at the way in which uncertainty can be incorporated into the traditional DCF approach so that the latter, which is otherwise conceptually sound, becomes relevant. Using a case study example, this is done by recognising that the DCF input variables are uncertain and will have a probability distribution pertaining to each of them. Thus by utilising a probability-based valuation model (using Monte Carlo simulation) it is possible to incorporate uncertainty into the analysis and address the

shortcomings of the current model. The MC simulation assigns a range of values in order to cope with uncertainty underlies each key cash flow variable. The process leads to a probability distribution of the valuation criterion used, giving investors a quantitative measure of risk involved.

Then Memon et al. have argued that, many systems have addressed the problem of location sensing. In the past, geographic positioning systems (GPS) have been widely used to track moving objects located outside environments. These systems have several problems such as operational, environmental and high cos. The fixed GPS infrastructure causes several problems in wireless systems. Thus, GPS is considered not a suitable solution for the fixed environment. Due to this, they claimed that, there is a need for the system that can be replaced with less effort to meet the future needs. Thus, the purpose of their paper is to discuss the available wireless technologies like radio frequency identification (RFID) techniques and mobile ad hoc sensor network. In doing so, the application of these technologies for remote objects information acquisition and tracking of moving objects is discussed. Further, the authors attempt to develop a communications setup for highways of Pakistan by using RFID and wireless sensor networks techniques to build a network that can be used for object tracking and information acquisition of moving vehicles on highways. This system may be used for variety of purposes especially for security enhancements at highways.

Patel and Hackney then have addressed designing information systems as complex adaptive systems. They provided the deferred design model of information systems to be capable of representing knowable and unknowable information requirements typical of complex adaptive systems. Drawing on complexity theory, Patel and Hackney argue that emergence is the cause of unpredictability and therefore unknowable information requirements. The theory of deferred action is invoked to explain the effect of emergence on information requirements and applied to model emergence for systems design. Their insights proposed are believed to assist designers in developing functional and relevant approaches within dynamic organisational contexts.

Alexopoulou et al. then provide a research paper on business processes and how researchers should consider agility to be the capability to modify and adjust them in the face of unexpected contingencies even during execution phase. Traditional process-centric approaches dictate action sequence definition within the context of a specific business process designed to cover organisations requirements at some former point in time. To address the phenomenon of business processes that fail to match newly evolved organisational needs we propose an event-centric approach identifying meaningful events that drive action execution. The authors consider actions as autonomous units being aware of only the events initiating them as well as the events they trigger. In that sense, the notion of business process sequence is eliminated; the needed functionality is modelled in a flexible manner in terms of autonomous actions, events and event combinations, promoting the dynamic formation of process instances at execution time. The authors' approach materialises through a set of methods, named actors-actions-events (AAE), which can be followed as a guide towards identifying the events and actions representing enterprise functionality. Its practical applicability is demonstrated through a simplified example in a medical setting.

Althonayan and Sharif then in their paper have claimed that technology is a key component in solving complex strategic issues. Much of the relevant literature recognises technology as the driving force behind change in the business world. Consequently, organisations are becoming increasingly dependent on technology to improve their

performance. At the same time organisations need to be extremely flexible in order to meet the demands of customers quickly, accurately and cost-effectively. They claimed that, to benefit from the potential of technology in highly dynamic environments, there is a need to integrate technology strategy with business strategy. Their research explores the integration between technology strategy and business strategy in the airline industry through the development of a framework which is based upon empirical research conducted with a leading commercial airline.

Maad and Coghlan then have traced the evolution of the Grid and discuss the potential of the Grid as a future infrastructure adapted to the dynamics of global business systems – the global supply chain. They argued that, technology challenges facing global business systems are framed in volume (scale), real-time distribution, and real-time universal access to the visual state of the global business process and its associated physical and financial workflow. They claimed that, the future vision of the next generation grid as a an infrastructure for service oriented knowledge utilities makes the Grid a candidate infrastructure to address the challenge associated with the dynamics of global business systems – the global supply chain.

Al-Karaghoul and Fadare have explored the theoretical and practical approaches in the banking sector, with emphasis being placed on financial service operations of cheque processing and securities trading, and in managing financial information. The banking sector was identified as it is presently the most vibrant and emerging sector in the financial services in Nigeria, which mentioned in the Financial Times. In 2007, the banking sector has been the driving force behind Nigeria's equity, which is in excess of \$3.3bn in equity capital market transactions. The banks that were investigated in this research paper included banks that incorporate functions in the equity market as part of their daily operations and in the possession of relevant information on securities trading as well as information on cheque processing procedures. The authors conclude by suggesting that, there is above average knowledge and understanding of ILM within the financial sector in Nigeria. Therefore, it was recommended that the application of ILM techniques should be improved upon in the management of information in the Nigeria financial sector and to obtain the best results at every stage of the information lifecycle.

Last but not least, Badii and Thiemert then in their paper, have claimed that fingerprinting is a well known approach for identifying multimedia data without having the original data present but instead what amounts to its essence or 'DNA'. Current approaches show insufficient deployment of various types of knowledge that could be brought to bear in providing a fingerprinting framework that remains effective, efficient and can accommodate both the whole as well as elemental protection at appropriate levels of abstraction to suit various Zones of Interest (ZoI) in an image or cross media artefact. Their proposed framework aims to deliver selective composite fingerprinting that is powerfully aided by leveraging both multi-modal information as well as a rich spectrum of collateral context knowledge including both image-level collaterals and also the inevitably needed market intelligence knowledge such as customers' social networks interests profiling which we can deploy as a crucial component of our fingerprinting collateral knowledge.

We hope you enjoy reading this issue as much as we enjoyed assembling it for you, and look forward to receiving your valuable contributions for the coming issue.