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on Modelling Business Information Systems

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Editorial Preface

In 2011 the IEEE Technical Committee on Electronic Commerce decided to broaden its scope and, accordingly, rename itself to the IEEE Technical Committee on Business Informatics and Systems. In line with this change in name and scope it decided to rename its flag ship conference to IEEE Conference on Business Informatics (CBI). Following these changes, it has been a first priority of the technical committee to exactly define the meaning of the term "Business Informatics" in an IEEE context and to underpin the need for a Business Informatics Conference under the umbrella of the IEEE.

Evidently, the IEEE as the Institute of Electrical and Electronics Engineers, the world's largest professional association for the advancement of technology, takes a mainly engineering sciences direction when approaching Business Informatics. In order to find its own scope for the IEEE Conference on Business Informatics, we have been inspired by Nygaard who defined informatics as the science that has as its domain information processes and related phenomena in artefacts, society and nature. In the spirit of this definition, we consider Business Informatics as a scientific discipline targeting information processes and related phenomena in a socio-economical context, including companies, organizations, administrations and society in general.

A key characteristic of Business Informatics research is that it considers a real-world business context in developing new theories and concepts that enable new practical applications. Thereby, Business Informatics research does not only extend the body of knowledge of the information society, but at the same time provides a tangible impact to industry. Consequently, Business Informatics is a fertile ground for research with the potential for immense and tangible impact. Or put it in other words - Business Informatics is research that matters!

There is no doubt that Business Informatics is an inter-disciplinary field of study. It endeavours taking a systematic and analytic approach in aligning core concepts from management science, organisational science, economics information science, and informatics into an integrated engineering science. Consequently, the field of Business Informatics involves a broad spectrum of more specific research domains that focus on important aspects of Business Informatics in the above mentioned context. For the first edition under the new title and scope, it has been important to sharpen the future research directions in the domain of Business Informatics. Thus, we had carefully selected appropriate research domains that represent the IEEE understanding of Business Informatics. In order to reach a common understanding of these domains in our community, we invited distinguished experts to introduce a research domain by defining its scope, its existing body of knowledge, and most importantly its future research challenges. These keynotes have been a means to guide the community in its way forward and provide directions for Business Informatics in the IEEE CBI context.

In this special issue of the EMISA journal we include seven papers, each based on a IEEE CBI 2013 keynote introducing a research domain in Business Informatics. Evidently, these papers are neither classical research papers nor pure surveys, since they focus to a large extent on the "future", i.e. the open research challenges (without providing a solution). In the following, we define the scope of the seven research domains and in parentheses we name the author(s) who introduce(s) the domain by a paper presented in this special issue.

1. Enterprise Architecture (Henderik A. Proper and Marc M. Lankhorst)
Scope: In contrast to partial architectures such as IT architecture or software architecture, enterprise architecture focuses on the overall enterprise. Enterprise architecture explicitly incorpor-

ates business-related concepts and artefacts in addition to traditional IS/IT artefacts. By embracing an enterprise-wide perspective enterprise architecture provides a means for organizations to coordinate their adaptations to increasingly fast changing market conditions which impact the entire enterprise, from business processes to IT support.

2. Enterprise Modelling (Ulrich Frank)
Scope: Enterprise modelling is concerned with the modelling of different aspects of an enterprise (goals, capabilities, organizational structures, business processes, resources, information, people, constraints, etc.) and their interrelationships. Accordingly, enterprise modelling offers different perspectives of an enterprise suitable for strategic planning, organizational design and software engineering. It covers the notation and semantics of enterprise modelling languages, the processes involved in creating and managing models, tool support, as well as quality of modelling.

3. Enterprise Engineering (Jose Tribolet, Pedro Sousa, and Artur Caetano)
Scope: The enterprise engineering domain aims to apply an engineering based approach to the design of enterprises and their transformation. As such, this domain is concerned with the development of new, appropriate theories, models, methods and other artefacts for the analysis, design, implementation, and governance of enterprises by combining (relevant parts of) management and organization science, information systems science, and computer science.

4. Business Process Engineering (Jorge Sanz)
Scope: Business Informatics deals with information processes in organizations, industries and society at large. This concept of "information in motion" links to business processes deeply. Processes are the expression of the behaviour of organizations and this behaviour leaves footprints in the form of artefacts of all sorts, including information. Thus, Business Informatics profoundly intersects with the social enterprise from a unique perspective, namely, the integration of information and people's behaviour.

5. Business (Model) & Service Innovation (Eng Chew)
Scope: Being successful in business no longer depends on having the "best" product, but increasingly depends on delivering high quality services, through attractive customer-centric business models, at affordable costs. This forces enterprises to continuously develop/ innovate their services and renew/innovate their business models. The world's evolution toward services-based clusters also brings new trends that blur the traditional boundaries across conventional industries, thus generating new opportunities for economies of scale and scope. This has led to increasing interests by disparate industries around the globe in the "art and science" of the practices of service innovation. A new concept, called service-dominant logic, has recently been introduced in the business discipline to study service phenomena - one that has significant cross-disciplinary implications for the research and design of IT-enabled service innovations and the attendant service systems.

6. Empowering & Enabling Technologies (Stephane Marchand-Maillet and Birgit Hofreiter)
Scope: Enabling technologies in Business Informatics integrate management practices with Informatics and Information Technologies. Business Informatics tasks may be performed, supported or monitored by automated or semi-automated technologies. Running environments range from thin mobile clients to large-scale distributed platforms, and newer areas such as analytics services, big data. Accordingly, we seek papers for original and innovative empowering and enabling technologies in domains related to Business Informatics.

7. Data-Driven Service and Market Engineering (Thomas Setzer)
Scope: Economic problems faced by today's organizations as well as society as a whole demand interdisciplinary knowledge from econom-

ics, management and informatics. Thus, economic modelling of IT-based solutions for analytically and statistically formulated economic problems is subject to this track. In particular, we are interested in the intelligent reduction of problem-relevant features from vast datasets Including customer dynamics, market behaviour, resource usage, etc.

It should be noted that these research domains represent cornerstones of the CBI conference series. However, it is our vision to complement the CBI picture on business informatics by other appropriate research domains. We plan to introduce these domains both at future CBI Keynotes and subsequent special journal issues.

All articles in this EMISA special issue were handed in by domain experts that have given a keynote presentation at the IEEE Int'l Conference on Business Informatics (CBI 2013), Vienna, 15th - 18th July 2013. These invited papers have then undergone a blind review for EMISA journal publication. Each paper had been assigned to two international reviewers. The reviewers for each papers have been chosen on the following criteria: The first reviewer has been a member of the IEEE CBI steering committee in order to ensure compliance of the paper with the scope of business informatics in an IEEE context. The second reviewer has been an accredited expert in the respective research domain not being involved in the IEEE CBI organization in order to ensure an open and unbiased representation of the domain. In the case where one guest editor is a co-author of the paper, the review process was managed by the other guest editor.

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