Preface:
Towards a new era: business processes integration and collaboration

Patrick C.K. Hung

The Hong Kong University of Science and Technology (HKUST), Hong Kong
E-mail: cshck@cs.ust.hk

Liang-Jie Zhang

IBM T.J. Watson Research Center, New York
E-mail: zhanglj@us.ibm.com

Biographical notes: Patrick C.K. Hung is an Assistant Professor at the Faculty of Business and Information Technology in a newly established university in Canada called the University of Ontario Institute of Technology (UOIT). He has been worked as a Visiting Assistant Professor at the Department of Computer Science in the Hong Kong University of Science and Technology (HKUST) in Hong Kong and a Research Scientist with Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia. He also has prior industrial experience in e-business projects in the USA, Canada and Hong Kong. Patrick has a Ph.D. and Master of Philosophy Science in Computer Science from HKUST. Further, he has a Master of Applied Science in Management Sciences from the University of Waterloo (UW) in Canada. He did his Bachelor of Science in Computer Science at the University of New South Wales (UNSW) in Australia.

Liang-Jie (LJ) Zhang is a research staff member at IBM T.J. Watson Research Center. Currently he is part of the e-business solutions research team with a focus on collaborative business process integration and management innovations. He is actively leading industry solution research in the field of Services Computing (i.e. Web Services, Grid/Utility Computing, Business Process Integration and Management) for e-business On Demand. LJ has numerous patents and about 70 published papers. He is the Founding Chair of the IEEE Computer Society Technical Community for Services Computing (TCSC). Currently, LJ is the Editor-in-Chief of the International Journal of Web Services Research (JWSR), the first academic journal focusing on Web Services. LJ received a BS in EE at Xidian University in 1990 and then at Xi'an Jiaotong University an MS in EE in 1992 and a PhD in Patten Recognition and Intelligent Control in 1996 at Tsinghua University.

ABOUT THIS INAUGURAL ISSUE

Many organisations have been forced to reorganise their business processes by using heterogeneous technologies in order to remain competitive in a business world. The integration and collaboration of business processes across multi-organisations are becoming more and more important in enabling business applications such as enterprise application integration (EAI). Thus, there is a need of an interoperable integration model that facilitates the expansion of automated process integration in an intra-corporate and inter-corporate environment. We are pleased and excited to launch the inaugural issue of IJBPIM. Especially this issue brings five distinguished papers from the 2003 IEEE Conference on E-Commerce (CEC03) held in Newport Beach, California, on 24–27 June, 2003.

In the past few years, different specification of business processes and interaction protocols are proliferating in the business and academic world such as the Business Process Execution Language for Web Services (Andrews et al., 2002). Business processes are required to be enacted by long duration multi-step activities. Activities represent both business tasks and interactions between services providers. Referring to the paper 'Orchestrating interrelated trading activities' by Si et al. describe a model for synchronising interrelated trading activities involving different negotiation protocols. In fact, there are increasing demands of negotiation protocols for supporting different business

applications. Negotiation is defined as a decision process in which two or more parties make individual decisions and interact with each other for mutual gain (Thompson, 1998). Proposals are sent to other parties, and a new proposal may be generated after receiving a counter-offer. The negotiation protocol continues till an agreement or a deadlock is reached, or even one or more parties quit. Furthermore, the role of matchmaker is to assign an appropriate service for each activity in a business process in this scenario. This assignment process is called matchmaking. The paper 'Matchmaking for business processes based on conjunctive finite state automata' by Wombacher et al. present a formal semantics to business process matchmaking and an operational description for matchmaking on finite state automata. One can imagine that a matchmaking process may also have to involve negotiation protocols. The two papers can be complemented in developing a sophisticated business process model.

On the other hand, the information processed in a business process might be valued and it is important to protect this information against security threats. One of the major security problems is that automated business processes often use heterogeneous and distributed hardware and software systems to execute a given activity. This gives rise to decentralised security policies and mechanisms that need to be managed. The research area of business process security is challenging as it involves many disciplines, from authentication/encryption to access management/security policies. Security concerns and the lack of security conventions are still the major barriers that prevent many organisations from implementing or employing automated business processes. Referring to the paper 'A decentralised public key infrastructure for customer-to-customer e-commerce' by Aberer et al. present an approach for a decentralised P2P public key infrastructure (PKI) in supporting business processes. Next, Yang et al. propose a non-repudiation message transfer protocol in the context of collaborative e-commerce that makes use of the techniques of message digest, message encryption, double-encrypted key, and dual

signatures in paper 'A non-repudiation message transfer protocol for collaborative e-commerce.' In summary, these two papers provide some promising security solutions to tackle the security issues in business processes.

Lastly, another important topic is about Quality of Service (QoS) in business processes integration and collaboration. A dynamic business processes executor should be able to provide differentiated servicing by ensuring appropriate QoS levels for different business applications. QoS usually relates to performance-oriented capabilities such as the service availability, accessibility, performance, time, efficiency, reliability, scalability, dependability, regulatory, integrity and security. There exist an increasing number of concerns to maintain the popularity and reputation of services providers about the QoS. It is a belief that QoS is a dominant factor for the success of a business processes integration and collaboration in the future. Referring to the paper 'Performance modelling of a business process integration middleware' by Liu et al. present a layered queuing network-based performance model for capacity planning and performance tuning of a Business Process Integration (BPI) middleware to address the challenge of rapid changing business requirements. In addition, matchmaking can also be based on binding support, historical performance and QoS classifications.

As a result, all five papers depict various directions with different challenges for this journal. We sincerely hope that IJBPIM will become a successful journal with your contributions in the future.

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