## Editorial

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**Biographical notes:** Pingyu Jiang is a Professor at State Key Laboratory for Manufacturing Systems Engineering at Xi'an Jiatong University, China. He received his PhD in Mechanical Engineering from Xi'an Jiaotong University, China in 1991 and was promoted to a Full Professor in 1999. Professor Jiang is author and coauthor of over 60 journal papers, two teaching textbooks, and one monograph. Since 2003, he has been a member of the editorial board for both *International Journal of Manufacturing Technology and Management* and *International Journal of Mass Customisation*. His main research interests include e-manufacturing, virtual manufacturing, product design methodologies like product platform design for mass customisation and MEMS design.

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Constructing digital enterprises is increasingly becoming popular among current manufacturing industries. It will be a shortcut for a current enterprise to be able to transfer its business model to a digital one and then to run in real-time under the support of e-commerce environment. In this way, the enterprise can ensure that it obtains maximum business benefits and takes a leading position in coming decades.

Basically, a digital enterprise must possess the features of not only digital manufacturing execution and resources management, but also seamless integration with e-business procedures concerning the enterprise reorganisation. These deal with many complex, enabling techniques we still need to research further. Such enabling techniques may include:

- enterprise modelling and management integrated with e-commerce technology

- reengineering processes with e-commerce

- e-technologies for manufacturing engineering like e-service in global manufacturing, web-based CAD/CAPP/CAM delivery, manufacturing system configuration combined with e-commerce, application service provision for CAX, *etc*.

- web-based information system and digital factory

- supply chain management in e-commerce framework

- collaborative e-commerce engineering

- knowledge engineering in e-commerce environment, and so on.

Aiming at solving some of the key problems involved in implementing digital enterprises, this special issue of IJIEM chooses five research papers and two notes mainly from Chinese-speaking areas.

In the first paper entitled 'Research on a workflow management system for dispersed network manufacturing', Hongfei *et al*. present an infrastructure to implement a kind of new mobile and collaborative workflow management system for networked manufacturing. Knowledge-based problem-solving logic is integrated into the above system so as to improve the performance of modelling the workflow. As an application example, this system is installed in the Hong Kong Dragon Airlines Ltd. and runs in real case.

In fact, innovative design capability is one of the most important factors needed for an enterprise to grow strongly. Such a design capability has also to satisfy the needs of market globalisation and product customisation, and can be integrated with the e-commerce environment. Starting from this point of view, the second paper 'Product configuration system based on the rule base' describes a product configuration design system supported with rule-based reasoning. The concept of product family is used to build a Generic Bill of Materials (GBOM), and then the configuration flow referring to checking customers' requirements and using rule-based reasoning is formalised. In order to demonstrate the correspondent methodologies, an electric cooker design process that uses the web-based product configurator developed by the authors is shown as an example in this paper.

In a digital enterprise, a framework is often used as interlink media to integrate different modules/tools that are dependent on correspondent enabling techniques. These typical enabling techniques under this framework include customer relationship management, supply chain issue, and so on. Hsieh introduces such an integrated framework to implement the strategy related to customer relationship management in the third paper, 'Constructing an integrated framework of life-cycle model to implement relationship management in an EC environment'. This proposed strategy is under the support of customer service life cycle model and is extended to the application level attached to suppliers. In addition, e-commerce environment is also a main part of this framework.

In the fourth paper named 'Generating a task-driven extended enterprise for e-manufacturing', a task-driven configuration model for extended enterprises is discussed in detail. Three task-allocating strategies and models are used for generating the tree model of an extended enterprise under the support of the evaluation method based on Analytic Hierarchy Process (AHP). On the basis of the strategies and models mentioned above, a Java-based software prototype is developed. The running example illustrates the feasibility and availability of the above idea.

One of the most important features for a digital enterprise is its web portal that is often an interface between the enterprise and the outside world. Therefore, it is necessary to develop a general evaluation model for websites and analyse their performances. In the fifth paper, 'Analysis of evaluation models for websites' by Yen, a conceptual framework for modelling the structure of a website and the correspondent accessibility model for website design assessment are presented.

The sixth paper, as a research note, shows a case study from Xerox Corporation in order to demonstrate how to implement the industrial practice of digital enterprises. A global Enterprise Resource Planning (ERP) system is introduced, which manages Xerox's 52 worldwide manufacturing plants and lays the foundations of future e-commerce solutions. It is very valuable for us to know what a real digital enterprise is and how it runs in the e-commerce environment in the future.

Recently, e-technologies have made a big contribution for internet-based engineering applications, which is an important basis for implementing digital enterprises. One of the developments is concerned with web-based CAD/CAPP/CAM service delivery. In the last paper, 'Portalet as a front end for enabling the e-service functions of CAX tool on the web', Jiang and Zhang show us an ongoing research on the portalet-based architecture and the correspondent setup of e-service functions.

To sum up, we can say that the current developments on both theory researches and industrial practices would make the concept of the digital enterprise true; the capabilities of enterprises should also be enhanced to meet the needs of market globalisation and product individualisation.

Finally, the guest editors would like to thank the Editor-in-Chief of *International Journal of Internet and Enterprise Management*, Dr. Eldon Y. Li, all the authors who submitted their papers to this feature issue, and the reviewers who contributed their very valuable comments to improve the quality of the papers submitted. Without their support, we could not have finished editing this special issue.