Editorial

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Increasing competition in international markets has led to significant pressures on industry. In recent times, these pressures have brought about changes to the process of product design and development. Globalisation has led to many changes in the operation of enterprises. Increased global competition has forced organisations to enhance product variety and shorten time to market. Therefore, nowadays, global product development tasks are executed by various facilities usually at different geographically location, where design and manufacturing teams must work remotely. This situation requires three major issues to be tackled:

- implementation of a collaborative integrated product development process among the different companies participating in the product life cycle activities
- establishment of environments that nurture the coordination and cooperation among engineering groups
- integration of software tools that allows the exchange of information and knowledge among engineers in an effective and efficient manner.

With the recent advances in computing and internet technologies, an integrated and collaborative environment, based on the corresponding functions of concurrent engineering and internet-based collaborative engineering, is imperative for companies to facilitate and accelerate the product realisation processes. Topics such as concurrent and collaborative engineering, feature-based design and manufacturing, evolutionary computational techniques and computer-aided process planning are important strategies and empowering technologies for developing an integrative environment, facilitating modern product design and development.

Thus, a collaborative environment appears to be a toolbox of key-enabling skills and facilities providing the most competent management of complex product development process. It relates to the capabilities of designing, developing and implementing integrated solutions for complex product development linked to economic, staff, knowledge, information, equipment, energy and materials issues.

Therefore, it is can be said that collaborative product development methods are able to serve as key factors that enhance successful new and innovative product development. The purpose of this special issue is to focus on a collaborative and integrated environment for enhancing synergies in collaborative environments in order to tackle multipolar real-life product development problems. It will promote, and disseminate research that deals with this vital issue. It offers researchers and practitioners the most recent concepts, methodologies and techniques in the fields of collaborative product development.

In the first paper entitled 'Derivation of agile SOA requirements using collaborative QFD', Sikri and Gell presents the concept of applying service oriented architecture (SOA) with quality function deployment (QFD) in a collaborative manner. A modified Blitz QFD methodology for collaborative SOA design based to provide Blitz-CSOA (Collaborative SOA) QFD is explained with a help of case study. In the paper, by Corallo et al., a business model for companies working in network where the knowledge and its protection is relevant is presented. It is as a conceptual paper and wants to highlight the appropriate role of the knowledge exchanged in a value network of companies for developing a new product. The conclusions contribute to expand the proposition on business model and knowledge sharing for new product development. Their paper is entitled 'The role of knowledge in the new product development process through the perspective of business model'. The third paper is entitled 'An empirical study to analyse consumer decision-making and their purchase intention towards products promoted via internet marketing', and is written by Rajshree Panda. This paper describes the impact of internet marketing and social media on the consumer's decision-making process, which is vital for product development organisations. It is explained that various organisations have started exploring the power of large user membership of social

networking websites to influence the online buyers. In the paper, benefits of Swarm Theory for e-marketing are explained. In his paper entitled, 'Fuzzy QFD integrated CAD/CAE and DFE framework: enabler of sustainable product design practices', Boppana V. Chowdary describes an approach where computer aided design and engineering (CAD/CAE) and design for environment (DFE) integration was deployed and using fuzzy QFD tool, product sustainable actions were prioritised. Then, the CAD framework was implemented for a selected product concept. Simulation Xpress module was then used to virtually test the feasibility of the selected product concepts. It is concluded that application of the fuzzy QFD logic is considered highly valuable to translate linguistic judgements required for relationships and correlations matrixes into numerical values. His conclusion is supported using a prototype that was built to conduct field tests on the identified product concept. In the fifth paper entitled 'Bug triage in open source systems: a review', a survey of recent researches in the bug triage for open source software development has been made by Akila et al. The paper highlights the state of art techniques employed in bug triaging in Open Source environment as well as in the enterprise environment. The future research directions, and issues involved in this area are presented in the paper. In the last paper of this issue, entitled 'Cooperative NURBS surface modelling framework using partial control algorithm and concurrent protocol', Hyunsoo Lee presents the application of Partial concurrent control algorithm in collaborative product development process. He describes that how a new and efficient concurrent protocol allowing multiple designers to work on the same region is needed without distorting design intents of other modellers. NURBS is regards as a basic geometric surface representation, and Partial concurrent control algorithm generates new control points. The concurrent optimistic modelling protocol defines designers' status with respect to design ownership and PLM status.

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