
Preface

The proceedings contain papers accepted for the 16th ISPE International Conference on **Concurrent Engineering**, held in the vibrant city of Taipei, Taiwan, from July 20 to 24, 2009. The conference is a sequel of the conference series launched by the International Society for Productivity Enhancement and has constituted an important forum for international scientific exchange on Concurrent Engineering (CE).

CE appeared in the 80's as a concept of parallel performing engineering design activities and integrating all related processes. This concept is based on general assumption that different components of product life cycle should be considered together and relatively early in the development process. The main goal of CE is to make processes more efficient and more resistant to errors. Substantive advantages can be achieved by adopting CE strategies and methodologies.

The last twenty years brought many changes in organization of product design and manufacturing. Engineers' professions received narrower specializations. Engineers became present on global market. Sometimes firms create alliances. Engineers work in firms from suppliers to final producers. Engineers cooperate and collaborate cross the border of countries. They need to use different methods and tools supporting their engineering and development activities. As a result, CE has been further expanded to support many aspects of product development. Meantime the whole CE approach has got different forms and names and has become omnipresent. Industrial presence of CE differs in particular cases, from well-established corporation implementations to little small firm applications.

From the beginning the role of information systems in Concurrent Engineering was treated as an indispensable facilitation technology. First methodologies and tools were concentrated on offering possibility to contact people and processes, to make available right information and knowledge at the right time. The presence of computer tools in CE is treated as a standard and covers a spectrum of activities. The functions are no longer limited to passively managing data and processes; they have become intelligent and proactively assisting design and development activities.

If one looks now at what is going on and at how many different issues are important in design, manufacturing, supply, distribution, etc., it is evident why Concurrent Engineering context is so rich and so complicated, why we have so many CE specializations and why CE2009 Conference's main topic is the following: **Global Perspective for Competitive Enterprise, Economy and Ecology.**

The plurality of CE specializations mentioned above was transformed on the following plurality of CE2009 Conference tracks: Systems Engineering, Advanced Manufacture, Product Design, Design for Sustainability, Knowledge Engineering, SCM, Collaborative Engineering, Web Technologies, Service Solutions. Apart of the enumerated tracks the conference has also seven special sessions: Special Session in RFID, in Collaborative Product Development, in Multi-disciplinary Design and Optimization, in Design Knowledge Utilization, in Competitive Supply Chain Performance, in Value Engineering, in Competitive Design.

The proceedings contain 84 papers by authors from 14 countries. If we concluded that they belong to different tracks and special sessions then we see how multi-perspective the content of this volume is. There are papers which are theoretic, conceptual and papers which have very strong industrial roots. There are also papers very detailed, made from a narrow view and very close to specific industrial case studies. We can also find papers which are based on real processes but which operate on abstractive models and which offer a bridge between an industrial reality and an academic research. This heterogeneous nature of Concurrent Engineering brings together diverse and significant contribution to product design and development, which is also what the proceedings intend to offer.

Concurrent Engineering doesn't develop equally in each direction. The way of development depends on many factors. We think that the content of this volume reflects what is actual, noticeable and the issues' variety in the present stage of CE methods and phenomena. As a consequence of this fact careful readers can build their own view of present problems and methods of CE.

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Global Perspective for Competitive Enterprise, Economy
and Ecology

Proceedings of the 16th ISPE International Conference
on Concurrent Engineering

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2009, XXI, 907 p. With CD-ROM., Hardcover

ISBN: 978-1-84882-761-5