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## Editorial

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### Herwig Winkler

Alpen-Adria-Universitaet Klagenfurt,  
Department of Production Management and Business Logistics,  
UniversitaetsstraÙe 65 – 67, 9020 Klagenfurt, Austria  
Fax: +43 (0) 463/2700-994079  
E-mail: herwig.winkler@aau.at

**Biographical notes:** Herwig Winkler is the Head of the Department of Production Management and Business Logistics at the Alpen-Adria-Universitaet Klagenfurt. Furthermore, he is the Director of Postgraduate Studies Industrial Management (MSc) and Business Logistics (MSc). He holds a Master's degree and a PhD in Social and Economic Sciences. Before his university career, he worked for several companies in the production, logistics and planning departments. His main research interests are: mass customisation strategies, design of production systems, innovations in logistics and supply chain management, supply chain planning and controlling, networks and virtual organisations.

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Today, many companies are shaped by customer-driven markets, shorter innovation cycles and increasingly rapid technological leaps. In particular, mass customising companies are facing the challenge of providing greater variety at low cost to remain competitive within a turbulent technological and economic environment. Accordingly, many mass customising companies are challenged to rethink solutions for strategic and operational management that correspond to the changing requirements for manufacturing and logistics systems. This challenge requires an innovative strategic alignment to realise above-average added value within the manufacturing systems to provide the company with an extra edge. Moreover, better performance within the concept of mass customisation requires an efficient design and effective handling of supplier-buyer interfaces in the logistical system to respond rapidly to customer needs while maintaining cost effectiveness. Hence, the accurate planning and monitoring of interfaces is necessary to ensure the better performance provided by well-functioning interfaces. In addition to the need for efficient and successful strategic alignment to address rapidly changing customer requirements and to implement properly designed interfaces, mass customisation companies, in particular, must provide innovative technologies and solutions to enhance business performance and to accelerate customer responsiveness. This requirement refers especially to the implementation of flexible and modular manufacturing systems to facilitate product changeovers and provide a greater variety at a reasonable cost. Hence, innovative and highly sophisticated production technologies are becoming much more important to fulfil customer-specific needs while ensuring cost effectiveness. Innovative information systems facilitate the flexible and effective handling of tailored processes and customer enquiries to address the growing need for customised products. Therefore, web-based technologies are becoming particularly important to provide a greater number of customising possibilities within a short time period.

To address these and other recent developments in the area of mass customisation, this special issue of the *International Journal of Mass Customisation* has been initiated. Its focus is innovations in manufacturing and logistics systems for mass customisation. This issue contains eight articles with interesting new results for realising or facilitating mass customisation in different areas of manufacturing and logistics systems. In the first section, two articles address topics in the area of product design and product configuration. Michael Slamanig, Christopher Schorling and Rüdiger Stern, from Accenture Management Consulting, Operations Business Domain, Innovation and Product Development Offering Group, Munich/Germany, focus their contribution on leading practices for the design to cost of mass customisable products. They present the design-to-cost approaches adopted by leading mass customisers to rebut the presumption that customer- and function-relevant features are in contradiction to cost-effective product design. Martin K.J. Waiguny, from Auckland University of Technology in New Zealand, and Gernot Moedritscher, from Alpen-Adria University Klagenfurt in Austria, investigate risk-related situational involvement and enduring involvement as indicators of configuration-induced customer confusion. They suggest the use of their findings as a criterion for assessing customers' information needs in a configuration setting. This topic is almost as important for mass customisation as the information flow in manufacturing and logistics systems.

In the next section, two papers present information on innovations in the manufacturing system of mass customisers. Steffen Nordahl Joergensen, Mads Hvilshøj and Ole Madsen, from Aalborg University in Denmark, report on the design of modular manufacturing systems using mass customisation theories and methods. Their article analyses the potential of modular manufacturing systems and mass customisation principles and evaluates this potential by examining three well-documented cases within the domain of industrial automation and robotics. Robert Obermaier, University of Passau in Germany, and Johann Hofmann, Maschinenfabrik Reinhausen, Regensburg/Germany, present a method for cost-efficient mass customisation with a web-based manufacturing execution system. They offer insights based on an interesting case study of a system that has been implemented.

The two papers in section three highlight new ideas in logistics and supply chain management for mass customisation. Alexander Smirnov, Tatiana Levashova and Nikolay Shilov, from St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS), address one of the key issues in MC, ad hoc logistics for delivering personalised products and components on the 'just-in-time' principle. They present new approaches to the configuration of ad hoc multimodal logistic networks and place particular emphasis on approaches and technological frameworks. Fabio De Felice, University of Salento, Lecce/Italy, Maria Grazia Gnoni, University of Cassino in Italy and Antonella Petrillo, University of Salento, Lecce/Italy present a multi-criteria approach for sustainable mass customisation in the fashion supply chain. They propose a methodological approach for evaluating sustainability performance and discuss an application to a fashion supply chain.

The last section is dedicated to cost planning as well as risk management and flexibility aspects of mass customisation. Thomas Ditlev Brunoe and Peter Nielsen, from Aalborg University in Denmark, offer insights using a case of cost estimation in an engineer-to-order company moving towards mass customisation. The focus in this case is the application of a statistical method of cost estimation for quotation purposes in an engineer-to-order environment, where cost estimation can be resource intensive and time

consuming. Carolin Singer, Wolfgang Kersten, and Meike Schroeder, from Hamburg University of Technology in Germany, and Joerg Dalhoefer, from the University of Applied Sciences Luebeck in Germany present a number of approaches to the alignment of flexibility in the supply chain for use in managing supply-side risks to ensure mass customisation. An innovative method is presented that aims to integrate supply-chain risk and flexibility management to enable mass customisation.

I would like to thank everyone who helped to realise this special issue. Especially, the numerous reviewers all over the world did a great job for saving the scientific quality – many thanks. Furthermore, I thank everyone at Inderscience for the great support in any stage of the planning, preparation and publication process. Particularly here Dr. M.A. Dorgham, Jane Lunnon, Jim Corlett, Darren Simpson and the typesetters should be mentioned.

The results presented in this issue will interest both scientists and practitioners in the area of mass customisation. It is my wish for all of the readers of this issue that such fruitful developments will enable them to achieve high customer satisfaction while simultaneously realising low costs.