

MASS CUSTOMIZATION NEWS

A Newsletter on Mass Customization, Personalization, and Customer Integration, edited by Frank T. Piller, TUM Research Center on Mass Customization & Customer Integration

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Editorial: Mass Customization: bits of a concept

Welcome to this issue of the newsletter which is entering its seventh volume. Hopefully this seventh year will be a lucky one for the field.

The German business magazine „brandeins“ took part in a popular activity at the beginning of each new year (in its Jan. 04 issue): Futurizing and thinking on how the world could look in two decades. In one article, the trend research consultancy “Z-Punkt” provided scenarios on business and society in 2020. One scenario on the future of consuming was titled “made by you”. In 2020, customers are forecasted to be able to create their own products (called “**personal fabbing**” in this scenario, related to auto-fab technologies used in rapid prototyping and increasingly also in flexible production).

Central elements in the scenario are mini-factories close to the market where consumers can create their own products in an experience environment (a scenario that - since 2000 - builds also the vision of our national

research cluster on mass customization at TUM, see www.sfb582.de). The authors comment correctly on the trade-off between convenience and experience: consumers either want basic products as convenient and easy as possible, or enjoy to go through a rewarding and relaxing experience of shopping and co-creating for special, non-daily products and services.

So far so good. **But will this world come only in 2020?** Do we have to wait almost two more decades until our mass customization ideas are becoming true? I was teaching an executive MBA class on mass customization recently, and one of the major points of discussions was if mass customization is really happening already NOW. While its profit mechanism is most appealing, somehow companies seem not to do it today. Even long time MC pioneer Levi Strauss finally stopped its "Original Spin" operations (introduced in the market already in 1994) three months ago (read my analysis of this case below).

But: Mass customization is a concept that integrates many ideas and approaches developed within different contexts. Its overall business model is based on counterbalancing the costs of giving each customer an individual product or service by new profit opportunities. Those derive either from an increased willingness to pay or from new cost saving potentials along all steps of the value chain ("economies of customer integration"), namely postponement, access to customer knowledge, and opportunities for better utilization of the customer base.

The full advantage of mass customization may only be achieved when all of its principles are implemented. But companies can already profit from MC thinking when they just follow some of its ideas: Take, for example, on-demand production: Postponing some activities of the value chain – but not all as in the case of fully individualized production – can reduce inventory costs and increase variant flexibility already enormously.

Or start to provide a personalized appearance of your goods and services by customizing just a few components of a complex product, perhaps only on the information level – giving customers a reason to interact with your firm. Or use configurators and interaction systems

to increase the access points for customer input for your company, but use the customers' configuration input to match customer requirements to the best fitting existing product variant without creating an (costly) individualized new variant.

So my advise for 2004: Even if you think that MC as a whole is too complicated for you or your customers, consider to profit from some of mass customization's principles. Being customized is often easier than you think.

Open Innovation Toolbox

(1) Design toolkits for mass customization and innovation toolkits are rapidly merging (see below in the conference report). Together with Hyve, a Munich development firm for these toolkits (<http://www.hyve.de>), our department has developed a **toolkit for mobile phone games**. You can create your very own game for your cell phone without any programming skills: <http://www.usertool.com> (more information on the project by Christoph Ihl, ihl@ws.tum.de). NEW: **Now finally in English language, too !!**

(2) **The First German Business Conference on User Innovation and Open Innovation: Integrating customers and user in the innovation process** by means of toolkits for innovation is becoming a promising strategy for more and more companies. Listen to examples from Adidas, BMW, IDEO Design, Siemens, Swarovski, Hyve, and others, how these firm integrate customers in the product innovation process. The conference takes place in Central Munich on March 25, 2004. The event is jointly chaired by TUM and LMU and organized by our department. More information below or at <http://www.win-serv.de>



Analysis: Why Levi Strauss finally closed it's "Original Spin" MC operations

The last mass customization year ended with an announcement that I already have predicted for much longer: Levi Strauss closed its Original Spin program. Original Spin was emerging in 1997 from the "Personal Pair", the first mass customization program of Levi Strauss originating in 1994. But why did Levi close its MC operations, being in the field for

such a long time, earning quite a high reputation, and being quoted in numerous studies as *the* textbook example of MC (*to say it correctly*: on the company's web site, it just says that the MC program is being refurbished and just stopped for a while; however, my feeling is that this break is for rather long).

I just can speculate what were the reasons behind the present stop of the program (a Levi representative was not available for comment for this newsletter). In my presentation on the "myths of mass customization" (see also the related case study in Piller/Stotko 2003) I name the following reasons: One major factor has nothing to do with mass customization in particular but the bad business situation of Levi Strauss in general. If the premier business struggles, companies are going back to their core – and this is mass (variant) production in the case of Levi Strauss. Also, due to cost cutting efforts, the last US factory was finally closed, and this was exactly the plant that was producing the customized jeans.

From a mass customization perspective, the Original Spin was over all the years, in my opinion, just a marketing and PR gimmick. As such, it worked very well, generating literally 100s of media reports. However, no concept can sustain just as a gimmick.

But the major reason why the project never took off is – from my perspective – that it never was a real business model. In an earlier newsletter (www.mass-customization.de/news/news03_02.htm#editorial) I commented on the three generations of mass customization. Levi Strauss always stayed on the first level. The concept was only based on the availability of flexible manufacturing technology. Levi managed neither to turn the customized product into a customized relationship with its customers (during all its existence, re-orders were never easily possible, and as an active customer myself I never got any request for feedback by the company) nor to use the knowledge from the individual orders for customer knowledge management.

Also, the purchasing experience was in most of the stores rather not a special experience and did not address the high emotional content and complexity (from a customer's eye) of the customized garments. During all the years and my visits at Levi Strauss I never got

the feeling that they wanted to make it real and big at any time. However, I strongly wish that Levi will have the courage to re-introduce a new generation of mass customization in the near future. Because one thing was always very obvious: consumers loved Original Spin -- most comments the company got were very positive or even enthusiastic.

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Trend report: Monogramming – mass customization's grandma'

Wealthy shoppers have long enjoyed the cachet of customized merchandise. Now shoppers of even modest means seem drawn to personalized goods. „M.C., and a H.N.Y.“ was the headline of a recent Wall Street Journal article on the growing trend of monogramming. Last Christmas was the largest "made-just-for-you" Christmas. Not real customization, but personalizing standard items like lingerie, sweaters, shirts, shoe bags, cashmere blankets, ceramic dog bowls, soaps, or even a meat brander have become a major selling item in last year's shopping list. Below some quotes from this article (full text: WSJ, Nov 28, 2003, pp. B1 and B2):

The reason: Monogramming is supporting the trend to return to the classics, to return to the basics, as Daphne Shirley of online retail seller RedEnvelope.com sees it. But monograms are not only being used in the classical manner. From terrycloth make-up bags and quilted vests to toe nails and toilet paper, there are ways you can put your stamp on just about anything.

Even mass fashion producer Gap Inc., has been re-energized in recent months in part because of monogramming. It offered monograms on corduroy pants this fall, advertising them in commercials featuring pop singers Madonna and Miss Elliott. Online, and in stores in major cities, Gap sold the pants emblazoned with a Gothic initial on a back pocket for an additional \$10. The pants sold out everywhere they were offered. Gap says sales would have been even higher if it had more of the temporarily installed embroidery machines in stores.

The WSJ thinks that several factors suggest that demand for customization will endure. Monogramming is such a hit as it is personal

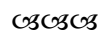
– but not too personal (and easy to manufacture and deliver, even just on the point of sale). People living in cookie-cutter housing want to customize their living spaces. Earlier this year, Lowe's Cos. began offering \$500 handpainted sinks. Customer can even bring their own designs. Melissa Birdsong, Lowe's director of trend forecasting, says she recently noted that shoppers are buying snap-together flooring in different colors, so they can create their own strips and patterns.

Increasing acceptance of ethnic diversity may also be a factor. "Now we're not only accepting that people are different, but expect them to be different", says Jim Neal of Kurt Salmon Associates. "It's a cumulative effect that's coming into focus now."

More information:

<http://www.cbsnews.com/stories/2002/10/21/early-show/contributors/lauriehibberd/main526382.shtml>

Read also the great **book "The Support Economy"** by Shoshana Zuboff and James Maxmin (<http://www.amazon.de/exec/obidos/ASIN/0670887366/masscustomizatde>) for one of the most comprehensive analysis of individualization and changing consumer patterns.



**Update: MC in the watch industry:
Swiss Factory121 launches
new consumer site**

With the launch of its new brand, 121™, the team of Factory121.com is reaching for the stars in more ways than one! Originally based upon a business-to-business concept, the Factory121 team soon realized the potential that existed for a unique customer-based brand platform. The decision was taken to launch 121 in October 2003 by creating a dedicated online boutique at <http://www.121time.com> offering an entirely new and dedicated line of timepieces, called the Metropolitan Collection.

The launch of the Metropolitan Collection, supported by a unique advertising campaign entitled 'Create your own time!', perfectly illustrates the brand values and philosophy of giving customers the chance to create and design their own individualized Swiss Made timepiece in a fun and playful manner on the internet at factory direct prices. Through the

possibility to customize diamond encrusted bezels and crowns, the individualization of each timepiece is more than likely to create a sparkle in the eyes of its customers! And Factory121 has found a very clever way to harvest individual willingness-to-pay of different consumers.

121 goes even further in the personalization of Swiss timekeeping by offering clients the opportunity to embed quality, certified diamonds into the design of each individual timepiece. Clients can then choose the type of precious stone and inlay design on the crown and bezel to suit their tastes. In partnership with a Geneva-based jeweler, exclusive crowns and bezels are available featuring white and black diamonds.

The collection is available with a selection of completely new and redesigned components that, once assembled, provides over a million different combinations of unique and individual timepieces. Of course, if a million is a tad overwhelming, 121 also provides a pre-selection of models chosen by its qualified staff that should suit the tastes of the most demanding experts in fashion and trends. Don't forget, customers can also modify a pre-selected model to his or her own tastes. With the possibility to then send and compare each individual model over the Internet, it's only a matter of time before everyone will have his or her own 121™ timepiece to show.

More information:

<http://www.121time.com> or through the corporate address at <http://www.factory121.com>.

Background information: http://www.mass-customization.de/news/news03_01.htm#4



**Conference Report: Manufuture -- the
Future of European Manufacturing**

The European Commission invited me to participate at the "Manufuture" conference that gathered more than 400 people in Milan in December 2003. The conference was organized by CNR-ITIA and the European Commission in order to set an agenda for future research and education in manufacturing. The working paper building the input for this conference places mass customization as the

central manufacturing system of today (get the full working paper at <http://www.manufuture.org>):

"Future manufacturing will be confronted with a society-driven, high-value-added environment. Mass customization will remain (sic!) an important paradigm, which brings the benefits of customized manufacturing -- individually tailored products that better satisfy the needs of the customer -- to mass production. ... The extended manufacturing enterprise must therefore comprise all functions that together generate and service customers' and society's needs in connection with the manufactured product. Logistics, finance, maintenance, end-of-life treatment, data management and R&D are all parts of the value chain."

In the working document, manufacturing is seen as "the key element of the value chain. However, it should be considered from a holistic perspective. The future of manufacturing is indeed linked with the realization of benefits for the final customers and society in general; companies should view their respective individual evolution in this context. For example, if industry is able to deliver a customized product in few days, it is clear that the major part of the value chain will be in Europe, with obvious consequences for employment."

This is an old argument in favor of sponsoring MC research in Europe, however, until now, its fulfillment is still open, especially if we think of re-allocating jobs from far low-wage countries back to Europe. However, at least in the apparel industry, a number of jobs were safeguarded due to a switch towards customization.

Prof. Tseng, HKUST, who keynoted the conference, stressed clearly that Europe (and the USA as well) will have no chance to compete in pure manufacturing with Asian economies (especially China). European firms have to attach their offerings with additional services.

In this context, mass customization and the future of manufacturing can not be seen in an ever growing improvement of the sheer manufacturing processes of material goods but have to be integrated in an environment delivering solutions instead of products. This means, however, that the distinction between products and services, which was stressed

explicitly or implicitly several times on the conference, is outdated.

But what does this mean more concrete? **D. Sharma, C. Lucier** and **R. Molloy** from Booz Allen Hamilton, a consultancy, define in a paper the bundle of products and services to solutions (see <http://www.chucklucier.com/pdfs/Solutions-to-Symbiosis.pdf>):

"Although the concept of customer solutions is new and unfamiliar in most industries, that hasn't stopped the phrase from becoming one of business's most overused terms. Sixty-three percent of the Fortune 100 already claim to offer solutions solutions are a fast-growing strategy for companies caught up in price competition and confronted by the threat of commoditization. But the term solutions is tossed around carelessly."

A real solution, in the authors' view, is a fundamentally different approach that creates additional value for customers and suppliers by meeting five criteria: "(i) It is co-created by a customer and a supplier. (ii) It integrates products with services to meet essential customer needs. (iii) Suppliers accept some of the risk, often through performance-based and/or risk-based contracts. (iv) Relationships between suppliers and customers are unusually intimate, far beyond a traditional buy-sell relationship. (v) Solutions, therefore, are tailored to each customer."

But if this is true, and I find this definition very much correct, the future of manufacturing is not only to produce knowledge on how to make products, but more importantly, on how to overcome traditional barriers of thinking and disciplines between manufacturing (engineering) people and marketing or sales. If a solution is co-created between a firm and a customer, this demands processes and "production facilities" where customers can be part of. This vision is seen as a nightmare of most manufacturing people today.

But overcoming the distinction between services and (material) products is not only a necessity for the "future of manufacturing", but also today for every mass customization offering. Successful manufacturers, and especially successful mass customizers, place their emphasis on offering a total experience, a total solution and not only a sheer mass-tailored product.

Introduction: The Teradata Center for CRM at Duke University

This guest article by Sarwat M. Husain, Program Manager, Teradata Center for Customer Relationship Management at Duke University, provides an introduction into the activities of this Center which is a cooperation partner of both our TUM Center on Mass Customization and the IIMCP, the International Institute on Mass Customization and Personalization.

The Teradata Center for Customer Relationship Management at Duke University (the Center) advances the field of Customer Relationship Management (CRM) through research and learning. This multi-million dollar global think tank, based at Fuqua, was established in January 2001 through a grant from the Teradata Division of NCR. Through this dynamic partnership between the Duke and Teradata, the Center leverages the intellectual resources of a leading academic institution and corporation to merge theory and practical business experience, thereby, creating a world-class center in CRM research and curriculum design.

The Center prioritizes, facilitates and disseminates CRM related works and research results in order to provide a greater understanding and appreciation of the field, in both the academic and practitioner realms. Through Fuqua's top-notch faculty and access to other corporate CRM resources, the Center is able to create thought leadership in this vital marketing area. We believe that the Center's work, findings and offerings influence the way corporations, students, and academicians view business in the 21st century.

The Center's activities are wide-ranging and provide numerous opportunities for involvement and learning to researchers, students and executives. As part of its research initiatives, the Center has funded cutting edge CRM research, offers a comprehensive dataset, publishes an ongoing working paper series, collaborates with other academic conferences and invites leading CRM scholars as visiting scholars to the Center.

Much of the Center's work is also dedicated toward imparting learning by disseminating CRM knowledge. In this regard, the Center develops CRM curriculum in the form of a syllabi collection, case studies, and video

lecture modules, which are all accessible through the Center's website. Other learning initiatives include an ongoing executive education program, "Managing Customer Value (MCV)" that is offered in collaboration with Duke's Executive Education. MCV is offered twice a year. Students can participate in CRM through the Center's Student Research Associate (SRA) program, which gives students an opportunity for direct involvement in CRM related issues. Finally, the Center is able to develop a strong CRM community by collaborating with other institutions, and inviting CRM industry experts as speakers for CRM speaker sessions on campus, among other events.

More information on the Center:
<http://www.teradataduke.org>
or contact shusain@duke.edu.



Integrated, High Volume Mass Customization in the Dental Industry: The InvisAlign Model

Guest article by C. Robert Kline, Jr. (HYTEC) and Eric Kuo (Align Technology) on the implementation of a fault tolerant manufacturing model in the dental industry. The integrated system takes dental impressions that are scanned in a HYTEC 3D/computed tomography system; the resulting 3D image data directly drives the manufacturing process. The process and the materials of manufacture are based on mass manufacturing technologies, yet each patient is treated entirely different.

Our two companies came together to attempt a merger of two unrelated technologies with a single aim. The technologies were the Align Technology mass customization model (already in use when we started) and the HYTEC 3D imaging system that has a "reverse engineering/rapid manufacturing" output (used for example to repair worn turbine blades). The HYTEC system is also used in imaging medical and dental implants; still, it had never been used in a mass manufacturing environment. The common aim was to produce at high volume the images and subsequently the manufactured orthodontic devices. Align manufactures, to order, orthodontic devices for straightening adult's teeth. The devices are clear "poly" material, which is virtually transparent – hence their commer-

cials state “invisible braces.” The production tool is what is known as a rapid prototyping material consolidation process.

The Align technical problem is to produce each device set entirely and only for a separate user; teeth are not standard, one size fits all nor thus can be the straightening devices for teeth! Each set is therefore “customized.” The Align manufacturing problem is to produce at high speed these devices economically; for this they had to rely on mass manufacturing principles. This, therefore, is an example in the biomedical world of mass customization. There are many other applications that would or could be served by the same principles, some fairly close to the Align application and some entirely different.

HYTEC provided a specific breakthrough technology to Align: HYTEC’s 3D imaging systems. Using these 3D imaging systems, Align was able to start with the patient’s dental impressions and go straight to manufacturing. This eliminated the time consuming and environmentally negative processes of forming plaster molds, enmeshing the teeth molds in epoxy, and annihilation scanning to get to the digital “map” of the patient’s teeth. Time saving was in hours, and environmental savings were in the thousands of dollars. Productivity increased, that is, while costs decreased.

Since Align is an international firm, with (currently) three international manufacturing sites, the digital files for driving manufacturing must be “Internet-able” and since the manufacturing flow depends on these input files the system must be fault tolerant. This means, then, that the system must be a high speed, fault tolerant, globally distributed, mass customization manufacturing system.

There is more to the story, though: the output files need to be inspected (so the “CAD” file must be one on which people can operate) and the final devices must be designed by qualified orthodontic specialists (who work on the meshes). All this must be done, is being done globally. Both firms believe this approach is one which biomedical engineers should keep in mind when thinking about custom designed devices that will be used by a large number of patients.

Contact for more information: Ted Roman, HYTEC, Inc., troman@hytecinc.com

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MCP Events: Calls for Papers for MCP Related Events

A large number of workshops, mini conferences and tracks dedicated to mass customization and related topics are coming up within the next months. So there are many opportunities this year coming up to exchange and interact on MCP.


At most of the following events you can still participate as an active participant and presenter. Check the call for papers / abstracts on the given conference web sites.

(a) The First German Business Conference on User Innovation: Integrating Customers in the New Product Development Process

Munich, March 25, 2004, <http://www.win-serv.de>

A TUM AIB conference !

Integrating customers and user in the innovation process by means of toolkits for innovation is becoming a promising strategy for more and more companies. Listen to examples from Adidas, BMW, IDEO Design, Siemens, Swarovski, Hyve, and others, how these firm integrate customers in the product innovation process. The conference takes place in Central Munich on March 25, 2004. The event is jointly chaired by TUM and LMU and organized by our department. The event is in German language only.

 Die Steigerung der Innovationsrate im Unternehmen sowie die Lancierung neuer Produkte und Dienstleistungen sind sehr häufig mit hohen Investitionsrisiken verbunden. Fehlschläge können das Überleben eines Unternehmens gefährden. Als Ausweg aus diesem Dilemma wird häufig die konsequente Ausrichtung aller Entwicklungsaktivitäten auf die Bedürfnisse und Anforderungen der Abnehmer genannt.

Eine Orientierung an der „Stimme des Kunden“ verlangt nach einer Integration des Kunden und seines Wissens in die unternehmerische Wertschöpfung. Jedoch machen nur sehr wenige Unternehmen im Innovationsmanagement Gebrauch vom Wissen ihrer Kunden. Bei der Tagung „Innovationserfolg durch Kundenintegration“ stellen namhafte Experten aus Wissenschaft und Praxis Methoden der effizienten Integration von Kunden in den Innovationsprozess von Sachgütern und

Dienstleistungen anhand von ausgesuchten Beispielen vor.

Die Tagung richtet sich an Vorstände, Mitglieder der Geschäftsleitung und Verantwortliche aus Forschung und Entwicklung, Innovationsmanagement, Produktmanagement, Marketing, Vertrieb und CRM. Ebenso sind auf diesem Gebiet tätige Unternehmensberater und interessierte Wissenschaftler angesprochen.

Die Tagungsgebühr beträgt € 200. **Mitglieder des IIMCP können für nur 100,- Euro teilnehmen!**

Organisation: Dominik Walcher, Lehrstuhl AIB - Prof. Reichwald, Leopoldstr. 139, 80804 München, Tel.: 089/289 24826 Fax: 089/289 24805, walcher@wi.tum.de

More information and registration
<http://www.win-serv.de>

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(b) International PETO Conference on Economic, Technical and Organisational Aspects of Product Configuration

Copenhagen, June 28th - 29th 2004,
<http://www.productmodels.org>

The application of product configuration systems is an efficient and important means of tailoring products to individual customer requirements. The preliminary experience from configuration projects carried out in industry indicates that the construction and implementation of product configuration systems within an organisation call for a multi perspective approach in order to deal with the business strategy, economic and organisational issues as well as the technical aspects of building and implementing product configuration systems. While the technical aspects of product configuration systems are being extensively researched, the economic and organisational understanding is lagging behind.

The aim of this conference is to help participants develop a further understanding of the interplay between these three perspectives. The conference will include presentations of case stories from companies having implemented product models and offers an opportunity to:

- 1) Present a paper on one or more of the economic, technical, and organisational aspects of product modelling.
- 2) Gain overview of the latest research and major trends.
- 3) Meet researchers and expand networks.
- 4) Learn valuable experience from industry.

The workshop will bring into focus three distinct perspectives: Economics, Technology, and Organisation. Scholars must focus their contribution on one or more of the three perspectives. In particular we welcome contributions highlighting the interplay of the three perspectives.

Authors are invited to submit abstracts of papers for consideration by the 1st of March 2004 to Tim Teglgard Christensen (TTC@ipl.dtu.dk). Abstracts should be of approximately 200-300 words. Authors are requested to clearly state their name, organisation, address, phone number and e-mail address on their abstracts.

Key dates:

- Final date for submitting abstracts: March 1st 2004
- Abstract selected and authors advised: April 1st 2004
- Deadline for submission of full paper: June 15th 2004

More information:

<http://www.productmodels.org/conference2004>
Email: petoconf@ipl.dtu.dk

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(c) Finish Mass Customization and Personalization Forum FIMCP 2004: MC Implications to Management of Information Systems

Turku School of Economics and Business Administration, Finland, 14-16 June 2004 (side event of ECIS 2004) <http://www.fimcp.fi/forum/>

Competitiveness in a mass customization environment demands the integration of information and communication technology potential with these new business strategies. Leading companies have already integrated their enterprise information systems, but introducing mass customization place requirements also for Supply Chain Management (SCM), Customer Relationship Management (CRM), Knowledge Management (KM), Product Data Management (PDM), Collaborative Product Commerce (CPC), and many other IS-related issues.

This challenging environment of continuous change place challenges for both IS and Business research and practice. The theme of the workshop is 'Implications to Management of Information Systems'. This theme brings into attention the IS perspective to mass customization research, where information and knowledge as well as their processing are emphasized. Researchers and practitioners from different fields and different countries are invited to contribute to this multi-discipline forum on mass customization.

FIMCP (www.fimcp.fi) is organizing this forum under eBRC umbrella (www.ebrc.info), as part of eTampere Information Society Program. Together, we will do our best to ensure to make this work-

shop useful and beneficial for all contributors and participants. The ECIS is the most prestigious European conference in the field of information systems.

You are invited to participate at the workshop by submitting an abstract until MARCH 1, 2004.


More information and the full call for papers at: <http://www.fimcp.fi/forum/>

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(d) Karlsruher Arbeitsgespräche Produktionsforschung 2004: Wege zur individualisierten Produktion

Karlsruhe, 11. und 12. März 2004,
<http://www.fzk.de/pft>

The Karlsruher Arbeitsgespräche are a major annually German event in the field of manufacturing research, organized by one of the major funding organizations. They provide each year a showcase on project and industry results in one field. This year's topic is (mass) customization and individualization. The event is in German language only.

 Präsentation neuester Forschungsergebnisse aus dem BMBF-Rahmenkonzept „Forschung für die Produktion von morgen“

Unter dem Leitgedanken „Wege zur individualisierten Produktion“ wird die Veranstaltung am 11. und 12. März 2004 in der Stadthalle des Kongresszentrums Karlsruhe vom Projektträger des BMBF für Produktion und Fertigungstechnologien, Forschungszentrum Karlsruhe, durchgeführt. Das Themenspektrum reicht von der Entwicklung neuartiger Geschäftsmodelle für produzierende Unternehmen bis zu Methoden und Verfahren für eine nachhaltige Produkt- und Prozessentwicklung, von flexiblen Produktionsausrüstungen bis zur kooperativen Produktion in Wertschöpfungsnetzen. Praxisbeispiele stehen dabei im Vordergrund und werden in der begleitenden Ausstellung auf über 1.000 m² „begreifbar“ gemacht.

Die Veranstaltung richtet sich an Führungskräfte in produzierenden Unternehmen und Fachleute aus Wirtschaft, Forschung und Verbänden, die an Wissensaustausch, fachübergreifenden Diskussionen, aktuellen Forschungsergebnissen und Anregungen für eigene Innovationen im Produktionsprozess interessiert sind. Die präsentierten Forschungsergebnisse stammen aus über 100 größtenteils noch laufenden Verbundprojekten, die vom Projektträger im Forschungszentrum Karlsruhe innerhalb des Rahmenkonzepts betreut werden. Das Rahmenkonzept unterstützt gezielt For-

schungsprojekte, die zu technologischen und organisatorischen Spitzenleistungen führen.

Weitere Informationen unter:

<http://www.fzk.de/pft>, E-Mail: alter@pft.fzk.de

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(e) The International Conference on Mass Customization and Personalization in Central Europe

Rzeszow, Poland, 20-21 April 2004,
<http://www.mass-customization.pl>

The University of Information Technology and Management in Rzeszow (Poland) in the cooperation with National Louis University in Nowy Sacz (Poland), The Association of Entrepreneurship Promotion in Rzeszow and a group of recognized experts, initiated activities with the goal of popularizing Mass Customization tools among scientists and entrepreneurs from Central Europe.

The Conference will be held on 20-21 April 2004 in Rzeszow, Poland is among the undertaken activities. The conference goals are to: Bring the mass customization concept closer to entrepreneurs and scientists from Central Europe, to exchange of information and expertise between experts and conference participants, to support to the creation of transnational cooperation networks with Central Europe education institutions and entrepreneurs.

The participants of MCPC 2003 in Munich identified several challenging research areas for universities and international organizations. Participation in the Poland conference will give you a chance to establish a scientific cooperation with Central Europe education institution what may be of value especially while competing for EU financial support.

For entrepreneurs, the event will give a chance to analyze experiences of other entrepreneurs, to consult your ideas with recognized experts as well as to promote your own business. We invite you to contribute papers or presentations from the following domains related to mass customization: Production, distribution, logistics; Modern management methods; Customer Relationship Management; Information Technology.

The conference will be held in Rzeszow – economic, scientific and cultural center of southeastern Poland. Rzeszow can be easily reached by car, train or airplane (airport in Rzeszow-Jasionka).

More information: <http://www.mass-customization.pl>, or e-mail to mpiotrowski@wenus.wsiz.rzeszow.pl

(f) ECAI 2004: Workshop on Configuration in conjunction with the 16th European Conference on Artificial Intelligence (ECAI-2004)

Valencia, Spain, Aug 22nd-24th 2004,
<http://www.ifi.uni-klu.ac.at/Conferences/ECAI04-Configuration-Workshop>

Representing and solving configuration problems have always been subjects of interest for applying and developing AI techniques because powerful knowledge-representation models are necessary to capture the great variety and complexity of configurable product models, and efficient reasoning methods are required to provide intelligent interactive behavior in configurator software, such as solution search, satisfaction of user preferences, optimization, diagnosis, etc. Configuration is more than ever a challenging area for applying novel AI techniques.

More and more sophisticated reasoning tasks are delegated to the configurator software; the software must thus integrate product-assembly knowledge along with customer classification, adaptive sales strategies, and customer assistance. This integration becomes particularly critical for e-business applications where customers directly configure products through the Web with no human assistance and without a deep knowledge of the products they are buying.

The workshop will be a one and half day event. Accepted submissions are organized as panels according to topics with short introductory presentations by panel members, allowing ample time for discussion to stimulate a workshop-like event. We invite submissions describing novel and previously unpublished research (possibly in progress) or experiences with AI in configuration-related areas, including but not limited to:

- [1] Configuration problems and models
- [2] Reasoning methods
- [3] Interactivity & e-business
- [4] Integration with other modules
- [5] Applications & Tools

All workshop participants must register to the ECAI-2004 conference, which also handles the practical arrangements such as workshop registration, location etc. Workshop participation will be by invitation only, and will be limited to 40 participants.

If you wish to participate, submit either a full paper of no more than 6 pages (or 6000 words), or a position statement, a short paper, or a problem instance (at most 3 pages or 3000 words). Short papers may address an important problem for further research or describe a practical problem or an interesting lesson learned. In addition, we solicit

proposals for short demonstrations (at most 3 pages or 3000 words, and software demonstrations taking at most 15 minutes), emphasizing the original contribution, functionality or conceptual foundation of the system.

Submission deadline: April 1st 2004
Notification of acceptance: May 7th 2004
Final paper due: May 24th 2004
Workshops at ECAI-2004: Aug 22nd-24th 2004

More information and full CfP:

<http://www.ifi.uni-klu.ac.at/Conferences/ECAI04-Configuration-Workshop>
Chair and contact person: Claire Bagley, Oracle Corporation USA (Claire.Bagley@oracle.com)

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(g) Knowledge-Based Methods and Applications for Mass Customization 2004

Wellington Institute of Technology, New Zealand, September 20th - 24th, 2004 as part of the "Eighth International Conference on Knowledge-Based Intelligent Information & Engineering Systems", <http://www.pe.mw.tu-muenchen.de/kes2004.html>

To achieve mass customization efficiently, it is necessary that measures of individualization are forecasted in a manner which allows the individual design of so far not pre-configured products. Meanwhile comprehensive attributes like product safety or the basic functionality have to be assured. Especially the very complex product structures and mutual interdependencies for mass customization efforts in the range of mechatronical products represent a decisive barrier. Thus, attempts of adapting and enlarging existing knowledge-based information systems are to be made, in order to provide far reaching and available flexibility for product customization.

The session is focused on the theory and applications of various intelligent techniques in the field of mass customization, including but not limited to the following topics of interest and areas of application:

- Knowledge- Based Information Systems
- Design research on mass customization
- Methods and Applications for product design:

Full call of papers and more information:

<http://www.kesinternational.org/kes2004>
<http://www.pe.mw.tu-muenchen.de/kes2004.html>

Session organizer: Technische Universitaet Muenchen, Germany, Institute of Product Development, Prof. Dr.-Ing. U. Lindemann
Contact: mc_session_kes04@pe.mw.tum.de

Reading Mass Customization

Pal, Nirmal / Rangaswamy, Arvind (Eds.): The power of one: gaining business value from personalization technologies, 2003



The book provides an integrated and easy-to-read overview on both the technical and business aspects of personalization, focusing on delivering customized communication with customers. In their introduction, the editors define personalization as the “combined use of technology and customer information to tailor interactions between a business and each individual customer. Using information either previously obtained or provided in real time about the customer and other customers, the ex-change between the parties is altered to fit that customer’s stated needs so that the transaction requires less time and delivers a product best suited to that customer” (p. 11).

Thus, personalization relates to all interactions between a business and its outside partners. However, in the book the term is also extended to products (what I would call mass customization). So, the authors of the book provide some good reflections on MC as well.

The book is edited and written with the help of other industry and academic experts by University of Pennsylvania scholars Nirmal Pal and Arvind Rangaswamy and is based on a workshop at this institution. The book is available print-on-demand book by www.trafford.com (ISBN 1-4120-1121-3).

New Books from the TUM MC Center

As already announced before, four new books from or under participation of the TUM Research Center on Mass Customization & Customer Integration were published within the last months (see the newsletter 2/2003 for full information):

(1) The Customer Centric Enterprise: Advances in Mass Customization and Personalization, edited by Mitchell M. Tseng and Frank T. Piller, Springer 2003.

More info: <http://www.mass-customization.de/cce>

Following an interdisciplinary approach, leading scientists and practitioners in the field share their concepts and strategies for building a customer

centric enterprise from the perspective of design, production engineering, technology and innovation management, customer behavior, as well as marketing.



(2) Mass Customization und Kundenintegration: Neue Wege zum innovativen Produkt, hrsg. von Frank Piller und Christof Stotko, Düsseldorf: Symposion 2003

A managerial book on mass customization and open innovation which can be customized by every reader! Select from more than 30 extra case studies and expert chapters.



Mehr Info zum Buch und Download:
www.mass-customization.de/ibook.htm



(3) Mass Customization: Ein wettbewerbsstrategisches Konzept im Informationszeitalter, 3. überarbeitete und erweiterte Auflage, von Frank Piller, Gabler 2003.



More info:

<http://www.mass-customization.de/literature.htm>

Frank Piller's scientific book on mass customization building the foundation of this concept from the perspective of production and strategic management. The capabilities of new information and communication technologies break with traditional borders and help to overcome, or at least reduce, many contradictions and limits in management.



(4) Proceedings of the MCPC 2003, edited by F. Piller, R. Reichwald and M. Tseng, more than 1500+ pages on interactive CD-Rom (plus 300+ pages update on special web site).

More info: <http://www.mcpc2003.com/proc.htm>

The latest state of the art of mass customization and personalization research. Read what more than 200 authors in over 100 contributions have to say about the design, development, production, marketing, sales, and service of MCP offerings.

Portrait: Who are we?

The **Department of General and Industrial Management** (AIB, <http://www.prof-reichwald.de>) within the TUM Business School is one of the largest departments of business administration in Germany (Head: Prof. Dr. Dr.h.c. Ralf Reichwald). Its key areas of research are information, organization & management. Major research fields are the role of information in competition and market dynamics, the modularization of the firm, strategic networks and virtual organisations, leadership research, service innovation, and customer integration and mass customization. Research projects are performed in collaboration with partners from international corporations as well as local businesses, research institutions, and the federal government.

The **Technische Universität München** (TUM, <http://www.tum.edu>), founded in 1833, is one of Europe's leading research universities. TUM consists of 12 faculties (schools) with 19,000 students, more than 480 professors, eight Nobel Prize laureates and nearly 9,000 scientific researchers and administrative staff.

The **TUM Research Group Mass Customization and Customer Integration** (<http://www.mass-customization.de>) is one of the leading institutions in the field (Head: Dr. Frank T. Piller). Its focus is to enable firms to become more customer centric by supplying customized products and services at near mass production efficiency. A major focus is the role of consumers and business customers in a value model based on customer integration (prosumerism).

Primary research fields are the development of business models for mass customization, empirical research on success factors, the design of configuration engines and design tools at the customer interface, and the use of customer knowledge to improve product development. Methodological competences are in the field of empirical consumer research (market studies, usability research, consumer behavior research), the economical evaluation of business concepts, and piloting of process innovations.

Dissimilation activities include a regular newsletter reaching more than 3000 subscriber, the organization and co-chairing of the 2001 and 2003 World Congress on Mass Customization & personalization, numerous workshops and symposia, and the publication of more than 100 papers and research studies, and several books.



Members of the TUM Research Group Mass Customization and Customer Integration: (upper row, from left. Christof Stotko, Christoh Ihl, Stephan Jäger, Timm Rogoll, Daniel Rackensperger, Sascha Seifert. (lower row, from left): Frank Piller, Melanie Müller, Dominik Walcher

What can we do for you?

Speaking and Workshops

- ✓ Please contact us for speaking proposals and topics for keynote presentations on mass customization, user driven innovation, personalization, and other aspects of customer integration.
- ✓ Customized workshops can give you and your employees or customers an in-depth introduction into this fields and are an starting point for own initiatives.

Contract Research and Consulting

- ✓ Mass Customization research has to be customized, too. Thus we do not offer any pre-packed research & consulting products but work together with our clients on defining solutions that will provide sustainable value to both the client and its customers. Please contact us for more information and a list of recent projects.



These services are offered in close cooperation with Think Consult, a Munich based consultancy helping its clients to provide customer value profitably. www.thinkconsult.com

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Our web sites:

University homepage and download of recent papers on the topic:
<http://www.aib.ws.tum.de/piller>

AIB Department of General & Industrial Management:
<http://www.prof-reichwald.de>

TUM Research Center Mass Customization and Customer Integration
<http://www.mass-customization.de>

The 2005 World Congress on Mass Customization and Personalization:
<http://www.mcpc2005.com>



Dr. Frank Piller is the Director of the TUM Research Center on Mass Customization & Customer Integration at the Department of General and Industrial Management (AIB) of the Technical University of Munich. His research areas are the strategic implications of new information technology at the

interface between strategic management, technology management, and marketing. Frequently quoted in The Financial Times, The Economist, and Wirtschaftswoche, amongst others, he is regarded as one of Europe's leading experts in the field of Mass Customization and Customer Relationship Management.

Dr. Piller is the author of numerous articles and papers and has written / edited five books. His 1997 article in the German edition of the Harvard Business Review and his first book on mass customization (1997) brought the topic onto the management agenda in Germany and other European countries. He is a managing partner of ThinkConsult, a Munich based management consulting firm specializing in Customer Interaction, Service Innovation, and Mass Customization.

Frank Piller graduated summa cum laude with a PhD from the School of Business Administration at the University of Würzburg, Germany in 1999, where he received his master's degree in 1994, too. In 2001, he was a visiting scholar at the Hong Kong University of Science and Technology. He is a fellow of the German Scholarship Foundation, a founding member of the European Academy of Management and an active member of several other scientific and professional organizations.

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