

The Business Impact of Additive Manufacturing

12th Annual International Wohlers Conference

Date and Time: Friday 3 December 2010, 09:30 – 17:00 (9:30 am – 5:00 pm)

Location: Exhibition Center Frankfurt/Main, Germany, Portalhaus Hall 11

Organizer: DEMAT GmbH (Frankfurt, Germany)

Chairman: Terry Wohlers, Wohlers Associates, Inc. (USA)

Conference Language: English

Registration Fee: Full day €300 + VAT (exhibitor), full day €390 + VAT (non-exhibitor), half day €160 + VAT (exhibitor), half day €210 + VAT (non-exhibitor). 10% early bird discount when registering by 31 October. Fee includes entrance into the conference and exhibition, technical papers, and lunch.

Registration Form: [Click here](#)

More Information: Contact Verena Frenkler at 49 69 27 40 03 30, verena.frenkler@demat.com, or fax 49 69 27 40 03 40.

Conference Overview

Developments in additive manufacturing (AM) are influencing strategic decisions in aerospace, defense, medical, dental, automotive, motor sports, consumer, and other industries. Advances in the technology for part production applications are creating:

- new prospects for economic development
- new ideas for products, businesses, and business models
- new methods of processing complex and high-value parts and assemblies
- new approaches to making light-weight structures
- new ways of combining additive manufacturing with conventional processes
- new educational and research platforms

Attend this conference to learn how AM technology is presenting vast opportunities for product development and manufacturing around the world. Discover the business impact of AM and how recent activities and trends are fostering ideas that were unthinkable in the past.

The Business Impact of Additive Manufacturing

12th Annual International Wohlers Conference

Session I: Morning



09:30

Welcome Address

Dr. Eberhard Döring, Chief Executive
DEMAT GmbH (Germany)

Dr. Döring is a mechanical engineer with a PhD in plastics processing. He created the EuroMold exhibition concept and has been CEO of DEMAT and exhibition manager since 1996.



09:45

Keynote: Cracking the Code of Mass Customization

Dr. Frank Piller, Co-director of the MIT Smart Customization Group
Massachusetts Institute of Technology (USA)
Professor of Technology and Innovation Management
RWTH Aachen (Germany)

Before entering his recent position in Aachen, Dr. Piller worked at the MIT Sloan School of Management. His research focuses on value co-creation between businesses and customers/users and the interface between innovation management, operations management, and marketing. Dr. Piller is regarded as one of the leading experts on mass customization, personalization, and open innovation, and is frequently quoted in *The New York Times*, *The Economist*, and *Business Week*, among others.

Presentation Summary: The growing individualization of demand and the advent of long-tail markets are forcing companies to re-invent themselves and reach new levels of flexibility. Mass customization is a key strategy to meet this challenge. Over the past decade, we have studied mass customization in more than 200 organizations and found that it is a strategic mechanism applicable to most businesses, provided that it is correctly understood and deployed. Using several case studies, Dr. Piller's keynote presentation will outline the building blocks of successful mass customization strategies and will provide ideas on how to avoid the pitfalls of its implementation. Also, he will explain how to turn heterogeneous customer needs from a thread into a big profit opportunity.



10:30

It's Game-Changing Technology, So Don't Drop the Ball

Mr. Simon Marriott, Managing Director
Formero Pty Ltd (Australia)

Mr. Marriott has been using prototyping and AM technologies to drive manufacturing solutions in Australia for the past 17 years. After establishing Australia's first rapid prototyping bureau in 1993, he joined Arrk Corp. in 2001 as an international director. At the time, Arrk had more than 180 manufacturing facilities in 30 countries, giving him deep exposure to the opportunities and challenges facing many industries. Mr. Marriott is also a board member of a number of start-up companies that are developing innovative technologies in diverse areas.

Presentation Summary: Additive manufacturing has been disruptive to the supply chain of a number of industries. In all cases, those affected have undergone consolidation and the customer experience has become better, faster, and generally less expensive. Many more industries are exploring the potential of AM, and for the early adopters, this will mean opportunity, growth, and market leadership. Mr. Marriott will review a number of AM cases currently underway in analytical instrumentation and marine industries and will draw parallels in other industries. The lessons learned in the prototyping industry provides insight into which industries may see disruption as current AM technology challenges are addressed.

11:00 am

Break and Refreshments



11:30

Intellectual Property in Additive Manufacturing

Mr. Willam J. Cass, Partner
Cantor Colburn LLP (USA)

Bill Cass is a partner at the intellectual property (IP) law firm of Cantor Colburn, with offices in Hartford, Connecticut, Washington, D.C., Atlanta, Detroit, and Houston. He has been co-chair of the firm's Litigation Department for the past 10 years. He holds a bachelor's degree in mechanical engineering from Worcester Polytechnic Institute. Mr. Cass combines his extensive trial experience with his engineering education to present technically complex IP matters to judges and juries. Mr. Cass has litigated and tried cases involving IP throughout the U.S.

Presentation Summary: Additive manufacturing combines the designs and data of multiple parties to generate a new product or assembly. The intellectual property rights of the various components should be addressed at the beginning of a project to determine proper protection and to avoid potential conflicts concerning infringement and ownership of a design. Through careful preparation, due diligence, and the use of adequate IP agreements and protections, the risk of conflicts can be greatly reduced. Due diligence encompasses more than an IP search of existing patents, copyrights, and trademarks, but should instead examine all aspects of potential claims and conflicts. Mr. Cass will explore potential areas of conflict and avenues of resolution.



12:00

Delivering Dental Implants Across the Internet

Mr. Joseph Kowen, CEO
iDent Imaging (Israel)

Mr. Kowen is the founder and CEO of iDent Imaging, a dental company that provides diagnostic software and surgical guides for the placement of implants. Previously, he served as vice president of marketing at Objet Geometries, a manufacturer of 3D printing systems. Prior to that, he worked in senior marketing roles at Iscar Ltd. where he was responsible for new market development in Japan and Korea. He served three years as president of Iscar Brazil. Mr. Kowen holds a law degree from Hebrew University of Jerusalem and an MBA degree from Case Western Reserve University of Cleveland, Ohio.

Presentation Summary: The rapid growth of 3D medical and dental imaging, particularly in the form of cone beam CT, is creating new ways of improving medical and dental treatment with additive manufacturing. Through the ease of data transfer on the internet, coupled with the widespread availability of AM technologies across broad geographical regions, medical professionals are able to project specialized surgical excellence across organizations and countries in ways that have not been possible until recently. A combination of software, the Internet, and AM technologies has created many opportunities for new products, clinical protocols, and innovative business models.

12:30 pm

Buffet Lunch

The Business Impact of Additive Manufacturing

12th Annual International Wohlers Conference

Session II: Afternoon



14:00

Additive Manufacturing: The Bridge to Production

Mr. Michael Siemer, President
Mydea Technologies Corp. (USA)

Mr. Siemer's additive manufacturing experience began at the University of Central Florida (UCF) where he helped commission the university's rapid prototyping lab. Mr. Siemer then worked at Walt Disney World Company in several areas of design and production for new rides and shows. There he worked on technology implementation and the development of CAD/CAM technology integration. He left Disney in 2003 and founded Mydea as part of the UCF Technology Incubator. His company is developing a unique service in which anyone can design and produce their own product.

Presentation Summary: Process improvements, materials diversity, and educational awareness have resulted in an increase in the application of additive manufacturing. Mr. Siemer will discuss AM projects that will address cost avoidance and the benefits of using AM for tooling and direct part production. His presentation will also concentrate on the key factors and business issues involved when choosing between tooling and AM, as well as the reasons for using specific AM processes for these projects. Mydea continues to push the limits of AM as it gains more knowledge and experience in applying it in innovative ways.



14:30

The Economy of AM Industry Standards

Mr. Ken Patton, Executive Director
National Center for Rapid Technologies (USA)

Mr. Patton is the former dean of Economic and Workforce Development at Saddleback College. He has more than 30 years experience in the community college system and has served on many local and national boards. He was the primary individual responsible for launching the National Center for Rapid Technologies (RapidTech), located at the University of California, Irvine. The center was established in 2007 and is funded by the National Science Foundation for the development and advancement of additive manufacturing and related technologies.

Presentation Summary: Mr. Patton will explain the significance of the National Center for Rapid Technologies (RapidTech) and its role in economic development. RapidTech focuses on new product development support and employee education and training. Both are critical to local businesses and regional and national economies. The majority of his presentation will address the economic implications of ASTM International Committee F42 on Additive Manufacturing Technologies. It will also explain why industry standards, and training for this standards, are so important to organizations worldwide.



15:00

Influencing Strategic Decisions in Aerospace

Mr. Orval M. "Jack" Nobles, Principal Investigator and Design Engineer
The Boeing Company (USA)

Mr. Nobles works in Boeing's Research and Technology - Direct Digital Manufacturing division in St. Louis, Missouri. He holds bachelor's and master's degrees from the University of Missouri. His experience consists of materials, processes, structures research, and tooling design and fabrication, which includes AM tooling and flight hardware for military and commercial aircraft. He has published many papers in his 22 years at Boeing and is past industry advisory board chairman of the National Center for Rapid Technologies (RapidTech).

Presentation Summary: Traditional supply chains and processes can greatly amplify changes in end-customer demand and produce their own internally generated boom-and-bust scenarios. Additive manufacturing is improving supply chain dynamics in aerospace and offering reduced part costs and time in the development of tooling. Multiple dissimilar parts can be built simultaneously with AM and one can rapidly and accurately produce functional models and finished production parts. Mr. Nobles will present problem areas associated with traditional supply chain and production dynamics and will review ideas for products, businesses, and business models, as well as new educational and research platforms that are now available.

15:30 am

Break and Refreshments



16:00

Designed for Success

Mr. Chris Glock, Program Manager
On Demand Manufacturing (USA)

Chris Glock began his career in 1991 with RMB Products, the parent company of On Demand Manufacturing, Inc. He served as the production manager until 1997 and has since served in many upper management positions, including aerospace contract manager, aerospace technical sales program manager, and polymer sales manager. In 2005, he became the sales and program manager of the On Demand Manufacturing operation in California, which was acquired from The Boeing Company.

Presentation Summary: On Demand Manufacturing has successfully produced tens of thousands of flight-certified AM components since 2002. The successful implementation of AM for aerospace applications requires knowledge of functional design characteristics, material properties, and process capabilities. Other considerations include weight, part count reduction, inventory reductions, quality systems, corporate infrastructure, and affordability compared to traditional technologies. Mr. Glock will focus on these considerations and will present the design and production of a complex environmental control duct using AM.



16:30

The Emergence of New Businesses from AM

Mr. Terry Wohlers, Principal Consultant and President
Wohlers Associates, Inc. (USA)

Mr. Wohlers has authored 370 books, articles, and technical papers and has given 75 keynote presentations on five continents. Through Wohlers Associates, he has provided consulting assistance to more than 160 organizations in 22 countries. In 2007, more than 1,000 industry professionals from around the world selected him as the #1 most influential person in rapid product development and additive manufacturing.

Presentation Summary: Additive manufacturing technology is creating unprecedented change. Never before in recent history has a manufacturing technology had such an impact on so many industries. Organizations in aerospace, defense, automotive, medical, dental, entertainment, and other industries are applying AM technology to the production of end-use parts and products. Some of the most interesting developments are among start-up companies that are seeking entirely new business opportunities. From nothing, these companies are developing interesting commerce that was not possible in the past. Mr. Wohlers will present examples and summarize comments made by some of the day's speakers.

17:00

Final Questions and Closing Comments