

# The Custom Manufacturing MegaTrend

## Where China and the West Fit In

9th Annual International Conference



**Date and Time:** Friday 7 December 2007, 09:30 – 17:45

**Location:** Exhibition Center Frankfurt/Main, Germany, Hall 8.1, Room Symmetrie 2

**Organizer:** DEMAT GmbH (Frankfurt, Germany)

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

**Conference Language:** English

**Fee Per Half Day:** €140 + 19% VAT. GARPA members pay €126, plus VAT per half day. Special price for full day: €240, plus VAT. Registration fee includes entrance into the conference and exhibition, technical papers, lunch, GARPA reception and party, and a chance to win valuable prizes.

**Registration:** Phone 49 69 27 40 03 30, fax 49 69 27 40 03 40, or email [verena.frenkler@demat.com](mailto:verena.frenkler@demat.com). A registration form and other details are available at [www.euromold.com](http://www.euromold.com).

### Goal

To concentrate on the growing number of opportunities in custom, replacement part, and short-run manufacturing and the role of China, Europe, and other parts of the world.

### Objectives

- Understand why custom manufacturing is becoming increasingly important
- Identify industries and companies that are among the first to embrace this emerging megatrend and others that are likely to follow
- Explore methods of additive fabrication for custom and short-run production
- Learn whether it is possible to obtain German quality at Chinese prices
- Discover how local, on-demand manufacturing can reduce shipping, inventory, and supplier relationship costs
- Consider the possible business opportunities in rapid manufacturing and what the future holds

### Description

This special international conference will investigate the growing number of opportunities in custom and short run production and the role of China, Europe, the U.S., and other parts of the world. The conference will clarify why custom manufacturing is becoming increasingly important, especially in the West. Industry experts will discuss methods of additive fabrication for short run production and present new and exciting examples of rapid manufacturing. What's more, they will review ways in which companies might be able to achieve German quality at Chinese prices. The speakers will also identify industries and companies that have been an important part of this megatrend. And finally, they will consider new business opportunities and explore what the future holds.

### Program

9:30 Dr. Eberhard Döring, Chief Executive  
DEMAT GmbH (Germany)

9:45 **The Second Industrial Revolution**  
Mr. Terry Wohlers, President  
Wohlers Associates, Inc. (USA)

New methods of manufacturing are bringing about fundamental change in the way products are designed and delivered. With advances in additive fabrication, it is now possible to conceive a product and deliver it to a customer within days. In the near future, a staggering range of new and distinctive products is expected to burst onto the scene. A number of them will come from people working at home. As the custom manufacturing megatrend unfolds, expect to see the custom design of medical and dental products, jewelry, sportswear, military replacement parts, business jet interiors, high-end automobiles, and motorsports. Also, anticipate the development of collectables such as action and sports figures and personalized awards and gifts.

10:15 **The World is Not Flat**

Dr. Ping Fu, President and Chief Executive Officer  
Geomagic (USA)

As the USA merges into the world economy, best practices in China will become best practices globally. Products developed in China will become global products. In this special presentation, Fu will provide her unique perspective on globalization, kind of a Thomas Friedman in reverse. (Friedman is the author of *The World is Flat*.) Fu sees the use of rapid manufacturing technology as an interruption to the painful outsourcing that many accept as the inevitable outcome of globalization. Will American business be able to reinvent itself? Can a nation based on democracy and run by lawyers find a way to balance shareholder value with human value? How long can China, a nation run by engineers, be content as the world's sweatshop?

10:45 Break and Refreshments

11:15 **The Future of Custom Manufacturing in China**

Mr. Gordon Styles, Managing Director and Owner  
Star Prototype (China)

How will China join in with the custom manufacturing megatrend? Currently, most of China does not see any point in doing a few hundred parts when so much money can be made making millions of parts. As with any developing country, China's costs will inevitably rise, as will its skills. Already, we are seeing textile-related industries move from China to Vietnam. Indeed, China will learn to do low volumes efficiently. When the market dictates that it wants UNIQUE, and it wants it FAST, there will be millions of Chinese people ready to provide this service.

11:45 **About Lead Times and Lap Times: RM in Motor Racing**

Mr. Tillmann Paul, Production Engineer  
Toyota Motorsport GmbH (Germany)

Manufacturing in motor racing can be characterized by three major requirements: High quality, short lead times combined with high flexibility, and low volume production. Quality is crucial because parts are designed for maximum performance and operated at their limits. The main advantages of rapid manufacturing are shortened lead times that permit a later design freeze, as well as greater geometric freedom. It is crucial to find applications where these advantages compensate for the inherently inferior properties of RM parts. New applications of RM will emerge as improvements are made to material properties, dimensional tolerances, and part repeatability.

12:15 **Expert Panel Discussion**

Join the morning speakers for an interactive session of questions and answers. Seek answers to difficult and probing issues and problems.

13:00 Buffet Lunch

14:15 **Custom Manufacturing: A Growing Opportunity for Europe**

Dr. Philip Dickens, Associate Dean of Research and Professor  
Loughborough University (England)

Until recently, custom manufacturing was a standard practice. In the past, clothing, suits of armor, swords, and saddles were special made for customers. It was not until the Industrial Revolution of the late 1700s that mass production became common. Over the past 250 years, the West developed technically and economically, while China largely maintained a culture of peasants, which are now being employed to manufacture low cost products for the world. Today, the West cannot compete against China for many products, but customization may be a solution. Dickens will explore which products are most opportune for customization, why customization needs to be local, and how rapid manufacturing can play a key role in this activity.

14:45 **Indirect Rapid Manufacturing of Metal Components**

Mr. Tom Mueller, Partner and Co-Founder  
Express Pattern (USA)

Rapid manufacturing applications have largely been limited to non-metallic materials due to limitations of additive fabrication (AF) for metals. However, the use of AF to create an intermediate step in the manufacture of a metal component, such as AF patterns for investment casting, has grown tremendously over the past few years. Such use of AF technology might be termed "indirect rapid manufacturing." Currently, the production value of indirect rapid manufacturing is many times larger than that of direct rapid manufacturing. Indirect RM is providing new alternatives and is leading to fundamental changes in the process of selecting a method of manufacturing.

15:15 Break and Refreshments

15:45 **Additive Metal in a Production Environment: The Emergence of a Disruptive Technology**

Mr. Greg Morris, Principal and Chief Operations Officer  
Morris Technologies, Inc. (USA)

Over the past two years, our industry has seen dramatic progress in the capabilities of several additive fabrication technologies. These advances have revolutionized how some parts are designed and manufactured, both at the prototype and short-run production phases. Morris Technologies was the first company in North America to introduce additive metal fabrication based on Direct Metal Laser Sintering technology from EOS. Morris will explore the role of metal technologies, as well as the critical quality systems and processes that must accompany them in a production environment. Also, he will explain why he believes these technologies will revolutionize the way some products are designed and manufactured.

16:15 **More Iterations, More Competitive: The Push for Formula One Success**

Mr. Steve Nevey, Business Development Manager  
Red Bull Racing (England)

The aim for any Formula One team is to fully optimize every part of the racing car. A way of doing this is to test as many iterations of a given part or system as possible. Rapid prototyping has significantly increased the throughput of Red Bull Racing's wind tunnel testing program. The development of additive fabrication technology has seen some fascinating applications, to the point where the team is starting to put components produced by AF onto the racing car itself.

17:00 **Expert Panel Discussion**

Join the afternoon speakers for an interactive session of questions and answers. Seek answers to difficult and probing issues and problems.

18:00 **GARPA Party & Reception**

Meet representatives from the Global Alliance of Rapid Prototyping Associations (GARPA) and win valuable gifts and prizes.

