15 March 2012
Workshop on Impact of the
Factories of the Future PPP

Session 1:
Sustainable Manufacturing

Project Acronym: e-CUSTOM (260067)

Project Title: A Web-based Collaboration System for Mass Customization

Project Coordinator: Laboratory for Manufacturing Systems and Automation (LMS) Director: Prof. George Chryssolouris, University of Patras, Greece

Presenter: Prof. Dimitris Mourtzis

Project Details

- **Project full title:** A Web-based Collaboration System for Mass Customisation
- **Project acronym:** e-CUSTOM
- **Type of funding scheme:** Collaborative Project
- **Work Programme topic addressed:** FoF.NMP.2010-2: Supply chain approaches for small series industrial production
- **Project Budget:** 4.5 Million Euro (€)
- **Start Date:** 01-06-2010
- **Duration:** 36 months

Consortium

11 Partners from 6 EU Countries

Project Coordinator: Laboratory for Manufacturing Systems and Automation, University of Patras, Director: Prof. George Chryssolouris

Project Manager: Prof. George Chryssolouris, Prof. Dimitris Mourtzis

End Users

CENTRO RICERCHE FIAT

AKÉO PERFORMANCE ENGINEERING

PRIMA INDUSTRIE

Grupo ALFA

mecánica MALLABI

Software Developers

Delcam

PDTec.

tecnalia Inspiring Business

Academic R & D

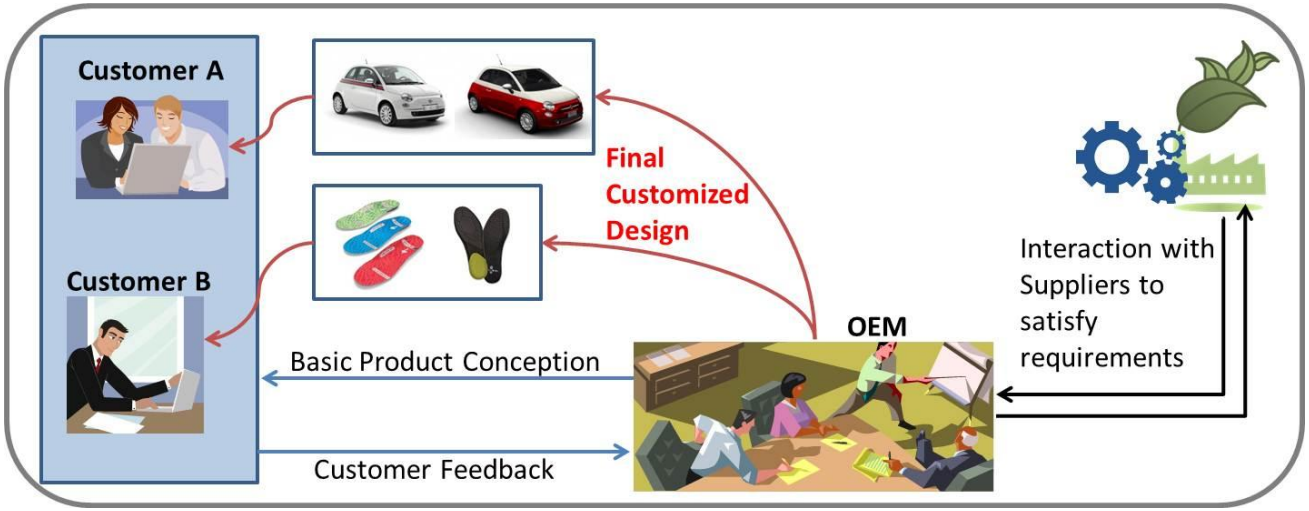
KIT Karlsruhe Institute of Technology

b-tu Brandenburg University of Technology Cottbus

Objectives

"unique products for unique customers"

- **S&T goals of the project**
  - **Bridge the gap between mass production and mass customization**
  - **Engage the customer in the initial design of the products**
  - **Manufacture of personalized added-value products in a novel, coordinated, eco-friendly and efficient decentralized approach**



Innovation issues

"each software module is an exploitable result"

- **User Adaptive Design System**

  Web-based user-friendly tool for the integration of the customer in the design of new products

- **Virtual & Augmented Reality Module**

  Advanced Virtual and Augmented Reality visualization features over a web-browser, based on free and open source software

- **Decentralized Manufacturing Platform**

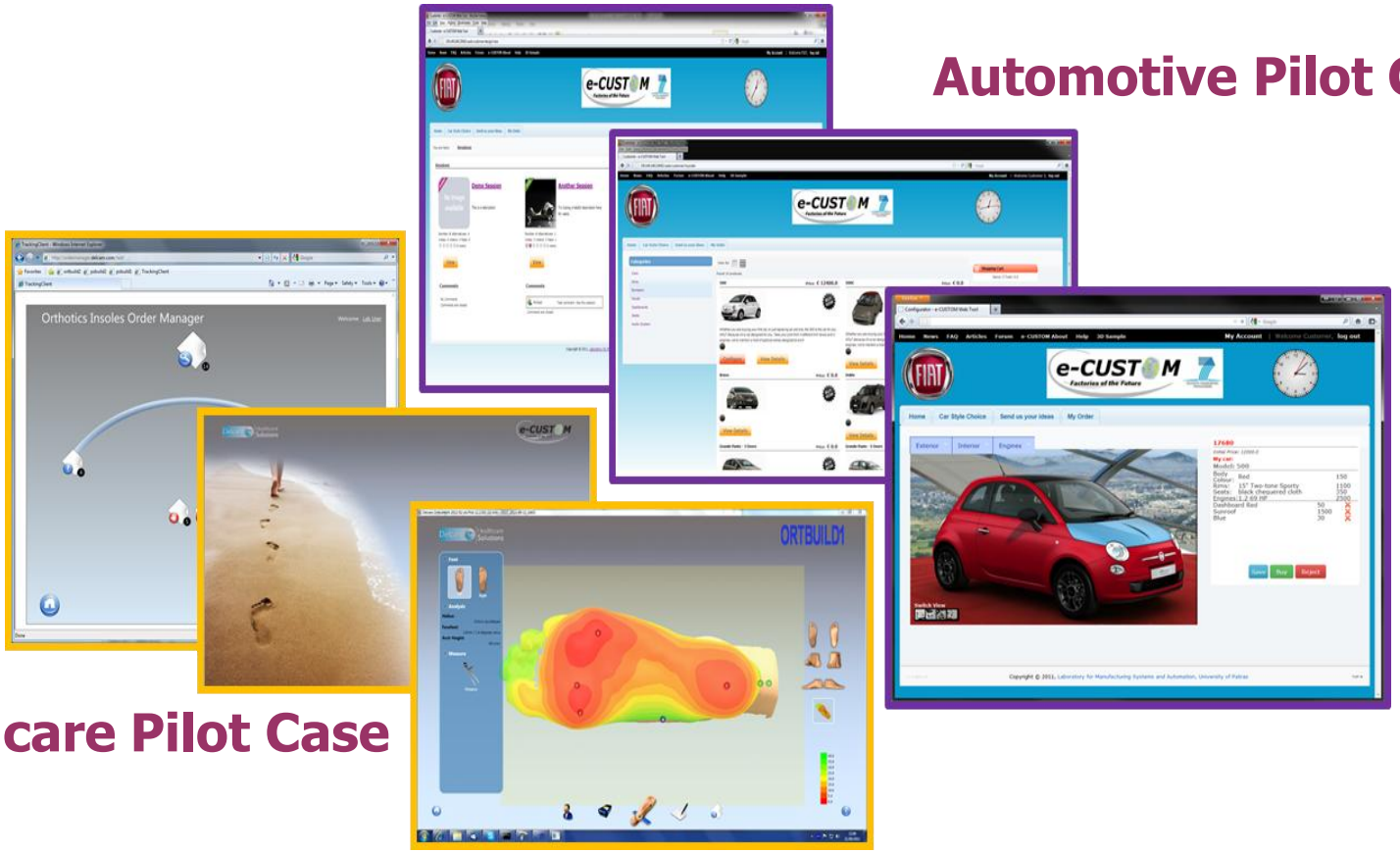
  A web-based platform for supporting the decision making procedure for the production of individualized products in a fast, cost-efficient and environmentally friendly way

- **Environmental Assessment Module**

  A software module that provides an assessment of the environmental footprint of supply chain configurations, using simulation-based metrics

Innovation issues

"domain independent solution capable of accommodating a variety of products"



PPP Added Value

- **How does the PPP adds value to your project?**

  - **The motivation for the e-CUSTOM project derives from the need of European industry to meet the increasing global consumer demand for greener, personalised and higher quality products through the necessary transition to a demand-driven industry - This is one of the core goals of the FoF PPP initiative**

  - **In the FoF PPP Strategic Multi-Annual Roadmap a main strategic sub-domain is Sustainable Manufacturing, that embraces Social, Technological, Economical, Environmental and Political contexts. Based on that, the foundations of the main e-CUSTOM developments, namely the User Adaptive Design System, the Decentralized Manufacturing Platform and the Environmental Assessment Module, are focused on sustainable manufacturing practices, high-added value products and environmental considerations.**

  - **The solutions of e-CUSTOM can have significant impact on the working practices of many different supply chain actors (e.g. OEMs, Suppliers, Dealers, etc.) in a variety of different manufacturing domains - Including a critical mass of industrial companies and associations, FoF PPP will act as an ideal dissemination platform for the e-CSUTOM solutions**

PPP Added Value

- **How can you provide an added value to the PPP?**
  - **e-CUSTOM will provide the customers with the opportunity to purchase eco-friendly, high-value EU products, characterized by increased personalisation, at low prices - Thus, it will support the strategic goal of the PPP to increase European manufacturing industry competitiveness and sustainable growth**
  - **e-CUSTOM will contribute to the implementation of the FoF PPP Strategic Multi-Annual Roadmap - The e-CUSTOM outputs will act as building blocks for the long-term implementation of the ICT-enabled intelligent manufacturing specified in the PPP**
  - **e-CUSTOM will develop innovative technology to support environmental friendly mass customization procedures, providing decision making methodologies - It will help the FoF PPP to demonstrate the high societal / environmental relevance of its promoted technologies**

Expected Impact

- **Reduction of ca. 5%-10% in energy consumption**
- **Reduction of transportation costs by up to 20%**
- **Reduction of raw material costs by 5% - 10%**
- **Shortening design time for personalized products by up to 15%**
- **Increase market share by up to 10%**
- **Decrease time to market by 15%**
- **Decrease in delivery time by ca. 15 – 20%**

European Commission

For more information
please visit the e-CUSTOM project portal at the following link:
http://www.ecustom-project.eu/

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