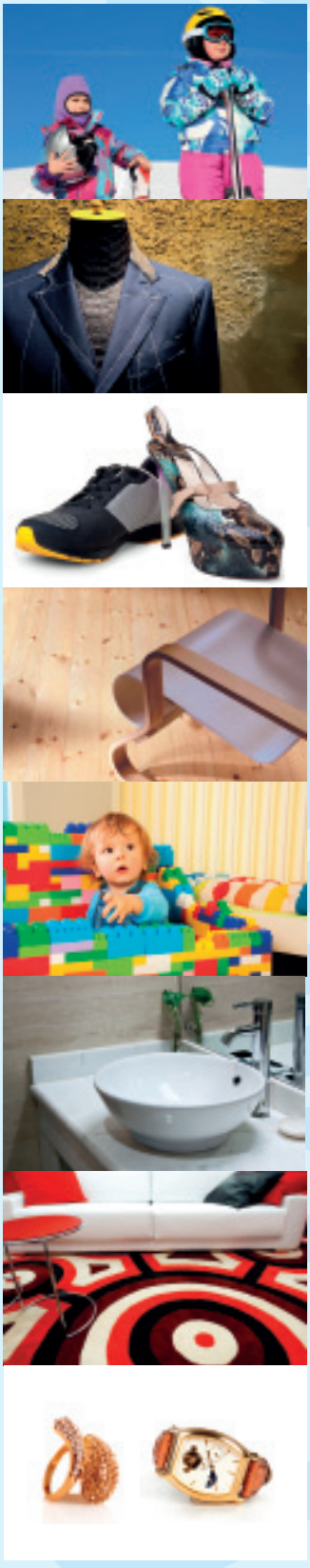
PROSUMER·NET

New Technologies and Innovative Business Concepts for Europe's Design-based Consumer Goods Industries

An overview of currently on-going or recently completed European Research Projects



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June 2012

PROSUMER·NET

Contents

1. **Introduction** 4

2. **PROsumer.NET** 5

3. **PROsumer.NET Partner Projects** 6
   - ARTISAN 8
   - CoReNet 10
   - Design4Children 12
   - DOROTHY 14
   - Fashion-able 16
   - FIT4U 18
   - IDEA-FOOT 20
   - made4U 22
   - Micro-Dress 24
   - MSEE 26
   - MY-WEAR 29
   - Net-Challenge 31
   - ROBOFOOT 33
   - S-MC-S 35
   - SERVIVE 37
   - SHOPINSTANTSHOE 39
   - SmartNets 41
   - SSHOES 43
   - TexWIN 45
   - TIIWS 47
   - ULTRAGRIP 49

4. **Acknowledgments** 50

1. The European Design-based Consumer Goods Initiative

Market trends and innovation challenges

Every EU or indeed global citizen is ultimately a consumer and final consumption is the largest component of the European economy, representing 56.4% of EU GDP. While consumer spending can fluctuate both in absolute and relative (as percentage of GDP) terms, its long term trend is positive, growing broadly in parallel with GDP. However, hidden below this general growth trajectory are a multitude of consumption and consumer trends driven by economic, political, societal, cultural, environmental and other factors. Some of these trends can be very erratic and often short-lived whereas others can be understood as truly secular long term trends fed by powerful durable drivers based on global political, economic or demographic developments.

Three such broad long-term societal trends which clearly have a wide impact on consumer behavior and consumption patterns world-wide and which create enormous opportunities and challenges for the consumer goods industry have been singled out.
These are:

- **Safety and sustainability in production and consumption**
- **Health, well-being and activity of an aging and individualizing population**
- **Satisfying needs and desires of a growing global consumer class**

The industrial sectors covered

The European designed-based Consumer Goods sector (incl. design, product development, manufacturing & distribution operations) represent a substantial and vibrant part of the European economy. It comprises Textiles, clothing, leather and footwear products, sports goods, games and toys, interior products made of different materials such as furniture, sanitary products, floor, wall and window coverings, table and kitchen ware, glassware and spectacles, watches, jewellery, bags & accessories and various cosmetic and beauty products as well as the design-oriented packaging of these and other products.

These sectors represent a total annual turnover of approx. € 500 billion and economic value added of € 150 billion while employing some 5 million people in more than 500,000 companies across the EU-27.

Collaboration of 5 European Technology Platforms

The European Technology Platform for the Future of Textiles and Clothing, covering fashion and functional clothing as well as home textiles and interior design products as well as materials for a further range of consumer goods such as footwear, furniture, toys, bags & accessories etc.

The European Footwear Products & Processes Technology Platform, covering a wide range of fashion and functional footwear and the related materials and manufacturing processes

The European Platform for Sport & Innovation, covering the complete range of sports goods, sports wear and sport and play infrastructures.

The European Forest-based Technology Platform covering among others wood and wood-based consumer products such as furniture & other interior products, toys as well as paper-based consumer products for educative, informative, entertainment and hygienic uses as well packaging materials and products.

The ManuFuture Technology Platform, covering manufacturing-enabling technologies from tools and devices to machinery to entire production lines and factories for all manufacturing sectors including those dealing with consumer goods.

2. PROsumer.NET

The PROsumer.NET project will investigate these societal trends in great detail to better understand what impact they will have on the European consumer goods industries in the coming years and decades.

Based on this socio-economic study as well as a comprehensive research and technology state-of-the-art analysis various scenarios for future industry development and innovation trends will be developed. Finally a strategic research roadmap and related innovation policy action plan will be delivered.

All this work will be accomplished by a consortium of 10 internationally recognized and excellently connected research, technology and industry organizations which can leverage the combined intelligence of hundreds of experts from across Europe.

The PROsumer.NET project work is structured into the following 4 Strategic Research Themes:

1. (Multi)functionality of products for specific end applications and use scenarios

2. Intelligent manufacturing and the smart value chain

3. New design & product life cycle concepts

4. Customization, personalization and consumer empowerment

For each of these themes a research and technology trends will investigated by surveying academic and industrial researchers and technology developers and industrial innovation strategies and trends will be collected and analyzed based on an industry survey.

Dedicated workshops with academics and industrial practitioners from all relevant sectors will be organized twice throughout the project for each research theme.

Innovation issues

Preconditions for the industry to successfully implement research and innovation strategies are:

- The preservation and enhancement of specialized **knowledge and skills** of company staff and external service providers
- The access to sufficient **financial resources** to make the necessary research and innovation investments
- A generally business-friendly and innovation-conducive **economic, regulatory and legal framework** to rapidly market and effectively protect innovative products and services

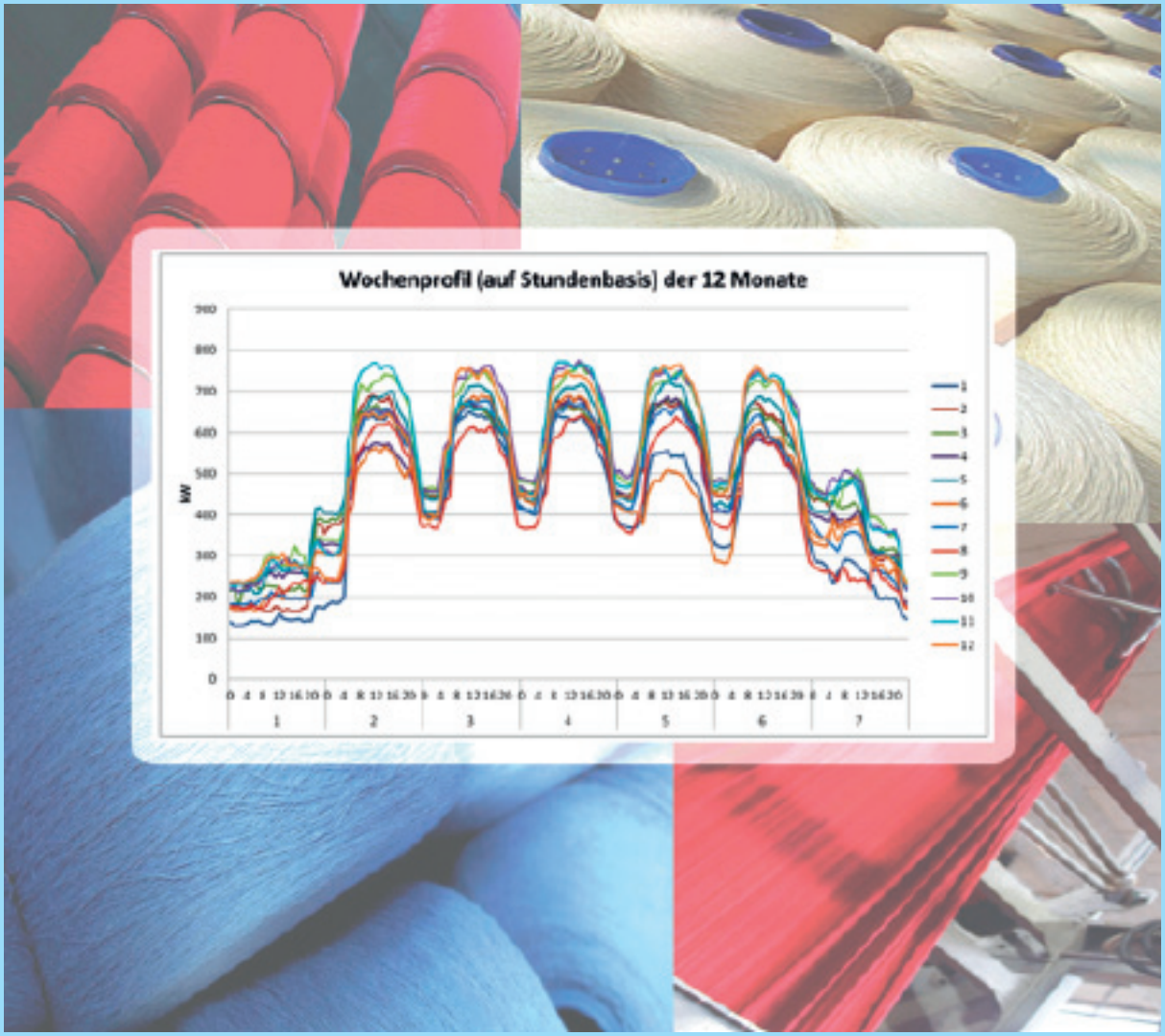
These 3 issues – education, finance & regulation – will be subject to two dedicated workshops with policy makers, finance and education providers.

3. Project Clustering - PROsumer.NET Partner Projects

Another activity, strongly related to the technological state-of-the-art analysis of the PROsumer.NET project, is the compilation of an overview of on-going or recently completed EU research projects in the consumer goods field. The first results of this activity were presented at a workshop in February 2012 in Milan to which coordinators of the more than 20 identified projects were invited. At this workshop it was agreed that a closer collaboration including joint dissemination activities between these **PROsumer.NET partner projects** will be organised with the support of PROsumer.NET. These joint activities will include:

- the development of joint dissemination materials such as this present brochure.
- the organisation of a joint dissemination events such as the set-up of a joint exhibition stand at the EU Industrial Technologies Conference in Aarhus, Denmark in June 2012.
- Provision of news and links to partner projects information on the PROsumer.NET website at http://prosumernet.eu/partner-projects.

Presentation of the individual partner projects of PROsumer.NET



Analytical awareness of energy consumptions to estimate impacts and costs of the productive and supply chain decisions.

Smart interfaces to take advantage from the future energy markets.

ARTISAN

www.artisan.eu

Energy-aware enterprise systems for low-carbon intelligent operations

Project Objectives and Results

ARTISAN project aims to tackle the problem of **Energy Efficiency** in the **Textile and Clothing industry** with the aim to minimize energy consumption and environmental impact along with costs.
ARTISAN adopts both an organization-wide perspective, through optimization of energy consumption in real-time within a single firm, as well as a supply chain perspective, by offering trading services for energy and carbon permits.
The **ARTISAN** architecture is based on an interoperable IT infrastructure for monitoring energy use and consumption patterns and proposes intelligent algorithms for their minimization.

More in detail, the most relevant features include:

- an **informative infrastructure** to collect store and communicate data on energy consumption at machine level;
- a definition of **energy performance indicators** for the structures and the services in the textile industry, is supported by the provisioning of services to analyze such indicators over the actual productive processes;
- the development of real time **optimization algorithms** for production planning and scheduling, which address both the cost reduction and energy saving perspectives, and the appropriate tools to enable their use;
- implementation of services and tools for **energy forecasting** on a daily base and energy and emission trading among partners of a supply chain or with external (Smart) Energy Grids;
- a series of **field tests** based on representative use cases from the European Textile industry that demonstrate the functionality, the interoperability and the quality of the results in real industry settings.

The expected main **benefit** is the newly developed comprehensive conceptual model (and related software tools) that allow a (minimum 10%) reduction of each company's energy consumption.

Opportunity to collaborate for industry: information sharing, public events, access to tools and energy consumption diagnosis

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"HEALTH IS THE GREATEST WEALTH"
Virgil (70-19 BC)

CoReNet

Customer-ORiented and Eco-friendly NETworks for healthy fashionable goods

www.corenet-project.eu

Project Objectives and Results

CoReNet will develop methods, tools and technologies for sustainable small series production. Industrial value of the project is based on applying innovative solutions for design and production of healthy fashionable clothing, footwear and accessories for consumer categories with health problems.

Objective
To address consumer needs and wishes of specific target groups (obese, diabetic, elderly, disabled persons) by enabling value creation of functional and fashionable configurable clothes and footwear of high quality, affordable price and eco-compatibility for the Textile-Clothing-Footwear Industries (TCFI).

Approach and Results
A networking framework and components to support:
- Market and customer needs analysis
- Collaborative design and configuration of TCFI goods
- Design and configuration of networks for collaborative production
- Adoption of rapid manu-facturing technology for digital printing and laser engraving for value co-creation on-demand of healthy and fashionable customisable wearables with green materials and sustainable processes

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Type of products involved in the project's research

Improving the quality of life of children through
the development of product design tools based on ICTs

Design4Children

www.design4children.eu

Development of innovative and cost-effective Design-Support tools for the European childcare products industry promoting the enhancement of children's comfort and extending products' lifespan

Project Objectives and Results

Design4Children is a project to improve the competitiveness of the children's products sector by addressing the needs of its main collectives: designers, manufacturers, retailers and, last but not least, end users: children and their parents.

The project's results will be three innovative services, based on state of the art research and development in the fields of biomechanics and information and communication technologies:

1. An advanced 3D design software tool
2. A virtual dummy for testing designs
3. A web 2.0 tool to advice parents about how to proceed in order to optimise their purchase

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Dorothy Layout Planner empowers the design of a shoe factory capable to handle Mass Customization challenges.

DOROTHY

Design of customer-driven shoes and multi-site factories

DOROTHY

http://web.ttsnetwork.net/dorothy

Project Objectives and Results

DOROTHY aims at transforming the footwear industry and its related business model for strengthen Europe's ability to compete in terms of high added value for the customer (as cost-based competition is not compatible with the goal of maintaining the Community's social and sustainability standards). DOROTHY developed tools and methodologies enabling, on one side, the design of customer driven adding value shoes, and, on the other side, the design, configuration and reconfiguration of flexible multi-site production factories, meant to manufacture the aforementioned shoes. The project also fostered the development of a suitable Business Model, enabling the interaction between the developed tools, and reducing the gap between value perception and value proposition for these customer driven shoes.

One of the most successful results in advanced industrial engineering consisted in the development of the Factory Layout Planner (FLP): a multi-client application, running on touch devices, providing multi-level support to the different phases of configuration and reconfiguration of production plants. The success of this tool moved beyond the footwear sector (where it was tested on Hugo-Boss plant, shown in the picture below), as it brought validation to a different manufacturing sector, namely woodwork, demonstrating the importance of the proposed approach beyond the specific footwear sector addressed.

Project coordinator contact

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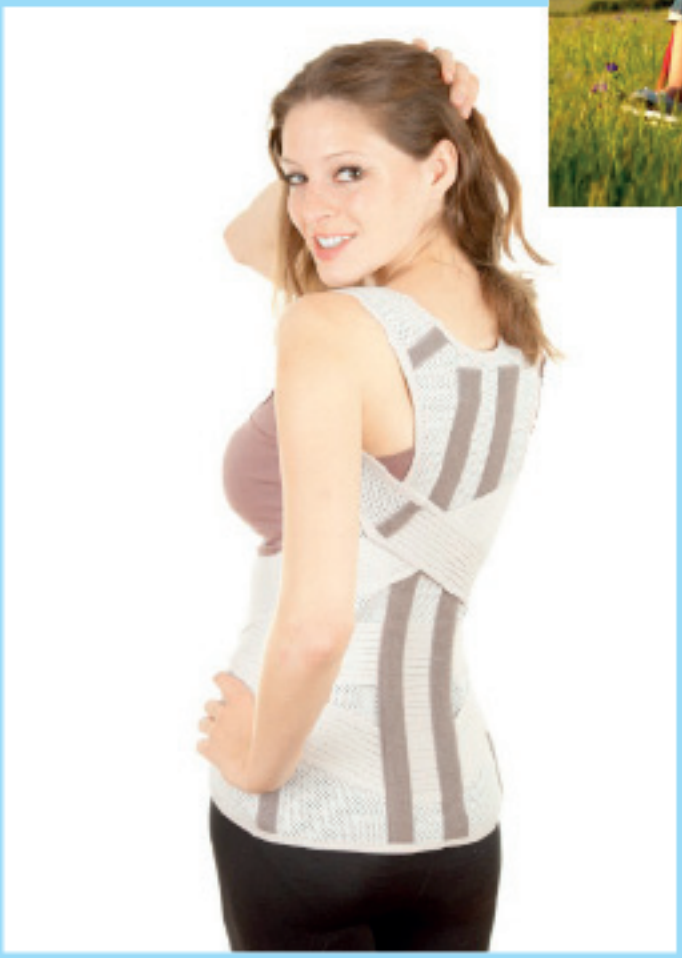
Enabling SMEs to efficiently design and produce personalized clothing, footwear and textile-based orthoses



Matching functionality, comfort and fashion for people with special needs

Fashion-able

www.fashionable-project.eu

Development of new technologies for the flexible and eco-efficient production of customized healthy clothing, footwear and orthotics for consumers with highly individualised needs

Project Objectives and Results

FASHION-ABLE aims to provide innovative European SMEs with new technologies enabling **efficient co-design and sustainable manufacturing** of personalised wearable products, for people with special needs.
The targeted products are: fashionable footwear for diabetic feet, fashionable clothing for wheelchair users, and textile compression bandages.

The expected results are:
- IT solutions for people to customise wearable goods, produced "on-demand" (co-design via internet)
- new IT tools for SMEs to produce on-demand and for special-needs
- use of new processes and materials: stretch-leather's, 3D-spacer fabric's, textile's finishing, flexible manufacturing process and machinery

Combining the researched technologies has the potential to directly impact on health, comfort, safety and quality of life of the addressed end-users, such as: diabetics developing diabetic feet (estimated 30 million), physically disabled people requiring a wheelchair (estimated 5 million), people affected by acute musculoskeletal disorders (estimated 40 million).

The selected end-users represent a "niche"-market whose **demand for customised fashionable products** is currently not sufficiently addressed by the market.

The project cross-sectorial (IT- manufacturing – medical) approach allows extension of functionalities and up-scaling of **functional customisation** with little effort into other products and new high-demanding markets.

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Delivering high performing and cost effective personalized products for professional-safety and outdoor trekking

FIT4U

Framework of Integrated Technologies for User Centered Products

www.fit4u.eu

Project Objectives and Results

Personalising safety and outdoor products in the shop, by offering from best fit till custom made choice to consumers, managing and balancing a fully integrated production in the factory.
This is the challenge successfully tackled by the FIT4U project, having the shop truly driving the factory from remote.

A combined approach of "shop targeted" technologies enables this:
- tools for quick capturing consumer's needs - including body and biomechanical parameters – to identify the right product, whether existent in the catalogue or to be manufactured;
- device for physical try-on and walking with "to-be-manufactured" shoe - totally emulating perception of inner shoe volume - to achieve product personalization in zero-stock scenario;
- web based CAD client for quick product customization process, directly connected with full back-end CAD, for automatic generation of shoe production design.

Once entered the factory, the rapid in-house manufacture of lasts and components, the engineering of personalised footbeds complete realization of new shoe products, personalised for use with new high performing materials for upper and anti-protrusion, and a fully modular customizable sole.

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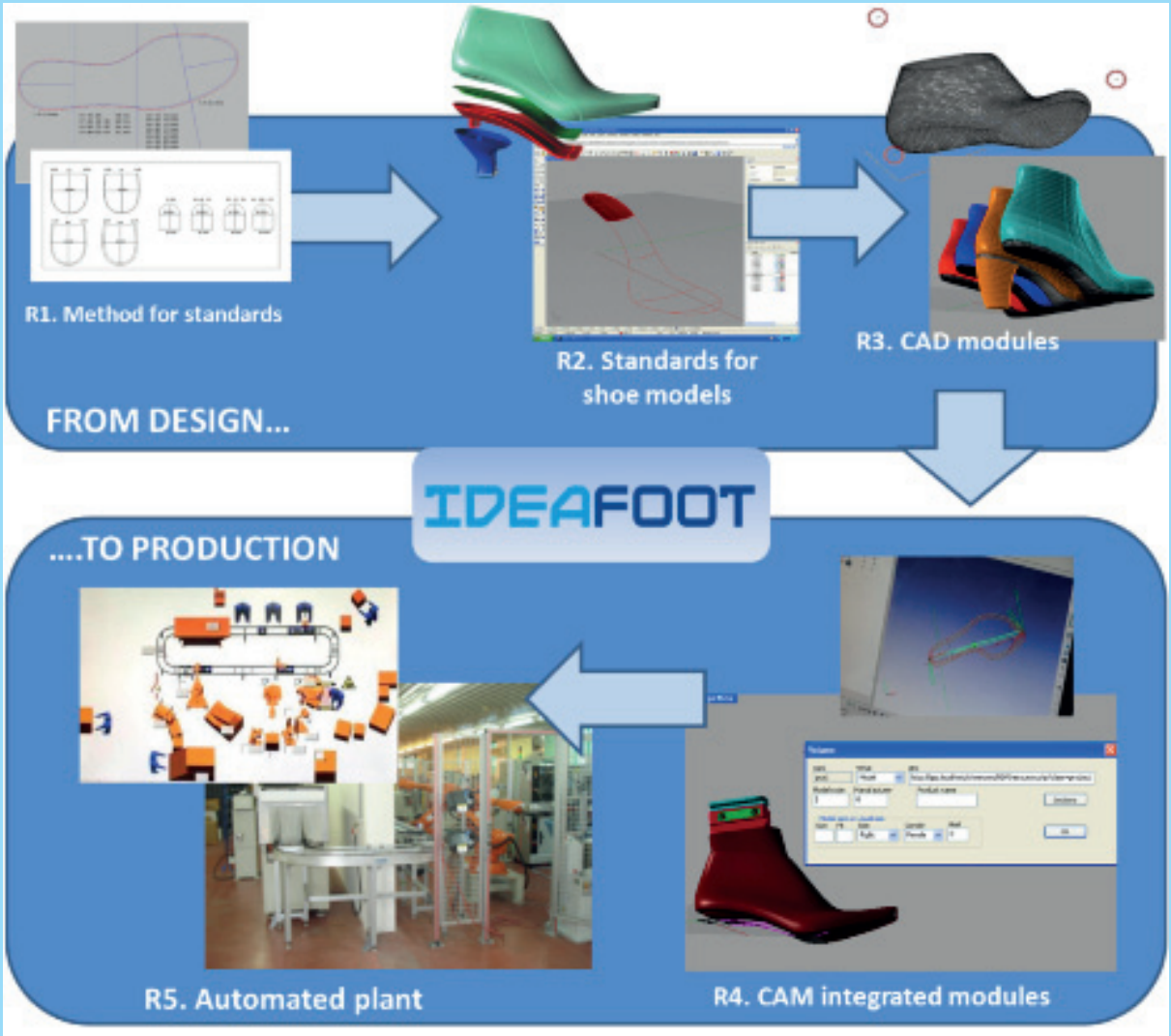

The strength of SMEs in driving an applied RTD project

IDEA-FOOT

IDEAFOOT
www.ideafoot.eu

Innovative DEsign and mAnufacturing systems for small series production for European FOOTwear companies

Project Objectives and Results

Project Objectives
IDEAFOOT is a project of the Research for SMEs programme (FP 7-SME-2008-1, n.232585) whose scope was the introduction of new organizational model in footwear SMEs based on the re-engineering of the business processes for the integration of design and production phases. The key element was the standardization of shoe modules to improve the capability to transfer geometrical information from the design to the production process in standard data format.
The implementation of automated plant in a real footwear SME environment was the key success factor of a project based on integration of traditional machineries with innovative manipulation systems through advanced interfaces and control system.
Partners of the project: BZModa (I), Brustia (I), RosiITA (RO), RED21 (E), University of Padua (I), Politecnico Calzaturiero (I), ITIA-CNR (I), Inescop (E), C2I2 (E).

Project Results available for footwear SMEs:
- Innovative methods to standardize geometrical features during design of the shoes and components
- Library of standardized geometrical features of shoe components
- CAD modules to support the easy development of the standardized shoe components.
- Set of CAM software modules, formats and communication protocols between CAD and the involved production machines
- Innovative integrated production plant based on automated last manipulation systems for movements and operation execution.

Project coordinator contact

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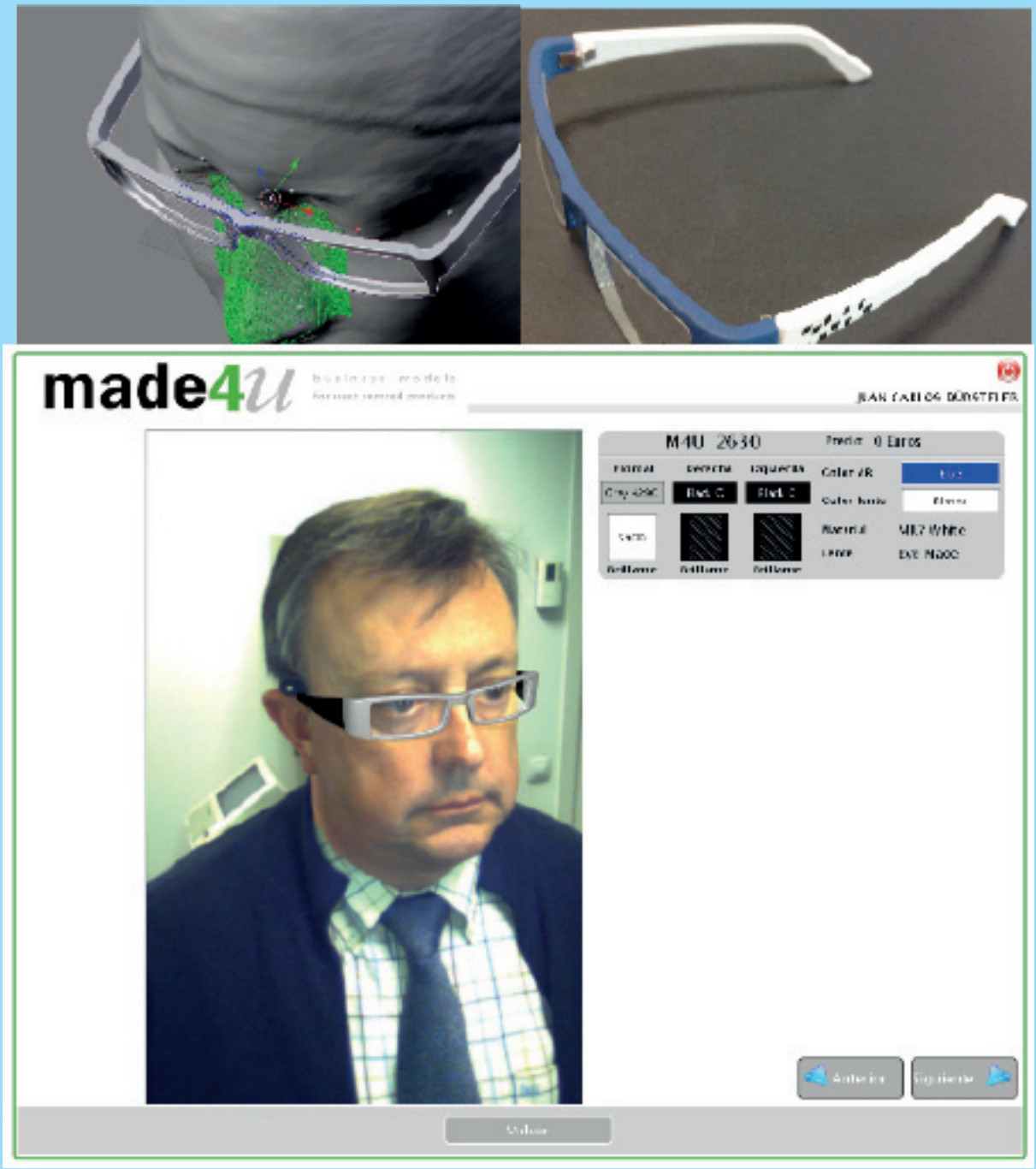

Top-left, wear position simulation of the3D personalized frame.
Below: simulation (virtual try-on) and top right, finished spectacle.

made4U

Business Models for User Centred Products

made4u
business models
for user centred products
www.made4u.info

Prolonging a sharper vision and comfort

For consumer products one strategy that provides customers with precious added value is achieved via Personalization. It allows marketers to offer products unique to end-user characteristics and build them from the ground up to a given person's needs and desires.

Our project, soon to reach a successful completion by end of June 2012, has been set four years ago out to research the key business and technology aspects for the production and commercialization of personalized spectacles. Bring-to-market strategies for similar products involve two core aspects: design and manufacturing of the personalized components themselves (lenses and frames), and innovative bring-to-market business models.

The new spectacles include lenses created with the help of patented (Indo) and improved lens-geometry design techniques, with customized lens treatments that can now be economically performed in small product batches. The frames themselves are created based on available libraries of seasonally updated and fashionable 3D template designs, that are further adapted to an end user based on a number of discrete reference points on the templates to fit his/her specific morphology and persona.

The technologies that are used to produce our personalized spectacles are: free-form lens cutting and polishing, laser sintering for synthetic materials and titanium frames, small batch lens surface treatments, and lens tinting& frame decoration with innovative printing inks and techniques. Our project has also created an Internet centered and open standards platform that connects opticians and buyers with lens and frame manufacturers.

Project coordinator contact

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Ecology and wearable functionality in garments can co-exist. Add this up to a consumer-centered business scenario, where you will be able to configure your wished sensors or monitoring devices, and also the degree of eco-friendliness of your outfits and enjoy smart, natural and healthy garments.

Micro-Dress

Customised wearable functionality and eco-materials – Extending the limits of apparel mass customisation

www.micro-dress.eu

Project Objectives and Results

It may appear at first sight that the two main ideas of the Micro-Dress project (eco-friendliness and wearable functionality) are somehow contradictory, or at least not converging. However the project's on going work is targeted on proving that ecology and wearable functionality can co-exist. This becomes even more interesting in a user-centered business scenario, where the customer is directly involved in the design/configuration process, empowered by the freedom to configure both the technology related added value (user selectable sensors, actuators, physiology monitoring devices), as well as the degree of eco-friendliness of his/her outfits (natural and healthy garments, preserving the environment and energy resources).
In order to reach the consumers, the Micro-Dress offer is being investigated through two distinct models of companies offering customised garments: an international brand with vertical integration of its production and also the evolution of the traditional tailor, the so-called Micro-Factory, offering to the consumers customised garments, in an easy and affordable manner.

Addressing the business challenge

Mass Customisation companies will need to address certain production challenges in order to be able to provide consumer-selected ecological and smart outfits. These challenges are being investigated through the Micro-Dress project and the research is leading to the following results:

- Rapid manufacturing techniques for printing directly to the selected eco-fabrics the wished micro-electronics components
- Software tools for eco-certification of the fabrics that can be used by the companies to evaluate the eco-profile of their suppliers and also will give their customers the opportunity to select the ecology degree of the fabrics they desire for their outfits
- Software tools to calculate and manage the CO_2 emissions related to the production of the fabrics
- A portable and rapid test that will allow the garment manufacturers to evaluate on site the chemical composition of the fabrics they will be supplied for their production. This test can be also used for showing to customers the ecological degree of the fabrics they have selected for the manufacturing of their outfits
- A supply chain management model to address all the different aspects of supplying and integrating e-devices into the production of customised garments.
- This model will be made available to the companies through a web application in the form of an e-Supply Chain Management platform, offered to the companies in the pay-as-you-go model, known as Software-as-a-Service.

The Micro-Dress project brings together a multidisciplinary consortium of nine partners, of which five are SMEs, two are prominent European institutes and two are leading textile and clothing groups.

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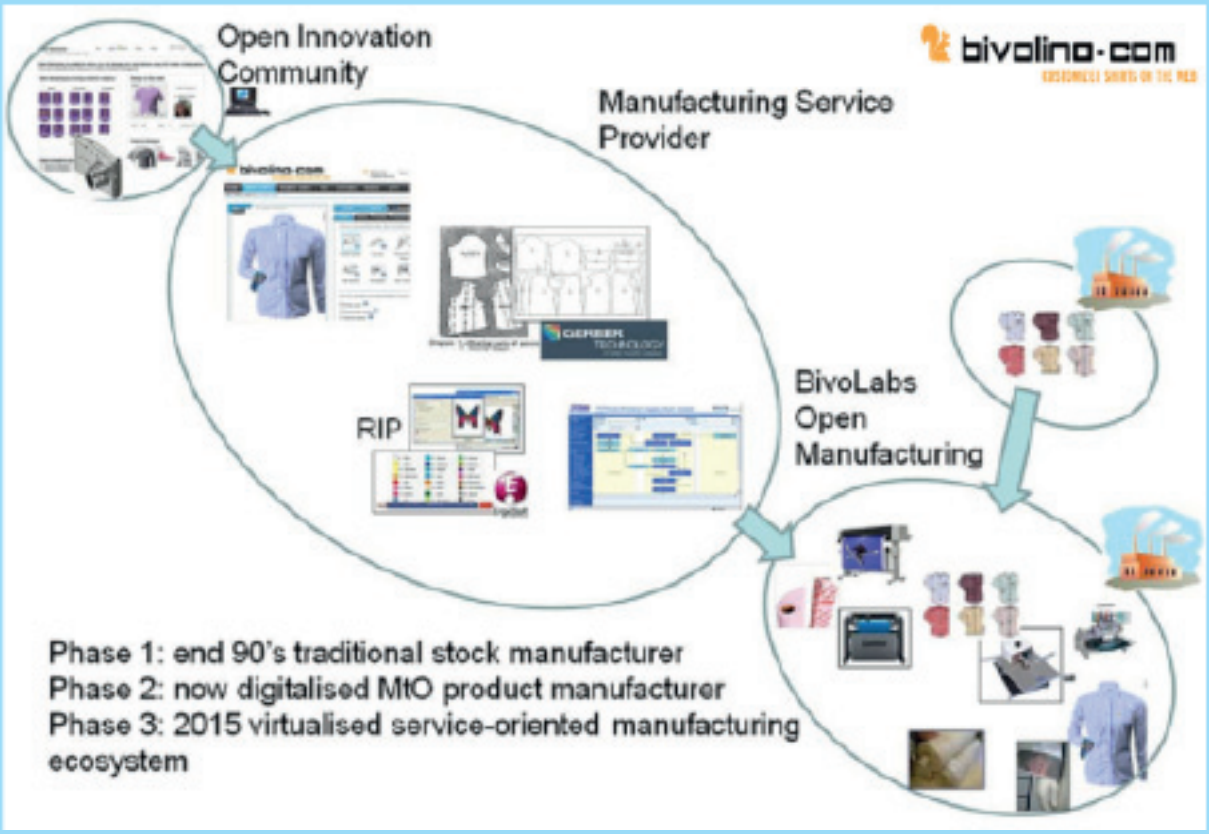

The Bivolino USE CASE in the MSEE PROJECT: Microplants ecosystem for made-to-order garments

Bivolino is an Belgium SME that sells on-line and produces customized shirts/blouses for men, women and children with a fully automated fulfillment system that connects all partners in the value chain. Thanks to MSEE, Bivolino clothing supply chains will become reversed (from consumers up to the first supplier), digital (by service-oriented architectures) and as far as possible virtual (by sharing virtual models along the micro-plants).
Bivolino will demonstrate the ability to offer to the consumers on-demand personalized services (extended products), like made-to-order, made-to-measure apparel, travelling tailors, fashion wardrobe subscription, or web 2.0 recommendations systems.

MSEE

Manufacturing SErvice Ecosystem

www.msee-ip.eu

Project Objectives and Results

MSEE vision

By 2015, service-oriented management methodologies and the Future Internet business infrastructure will enable European virtual factories/enterprises to self-organize in distributed, autonomous, interoperable innovation ecosystems of tangible and intangible manufacturing assets, to be virtually described, on-the-fly composed and dynamically delivered as a Service, end-to-end along the globalised value chain.

Servitization for Manufacturing Industry

Main MSEE outcomes

- A complete set of **Servitization Projects Templates** to be configured for any kind of Domain and Sector
- An innovative **Servitization Maturity Model** for driving EU Manufacturing Enterprise towards advanced forms of servitization
- A **Service Lifecycle Management Toolbox** to model the various aspects of an enterprise during its servitization
- A collaborative **Innovation Ecosystem Platform** to stimulate creativity and co-create service innovation through collaboration
- An innovative set of **Enterprise Applications as a Service** to support the operation of advanced product-related services in an ecosystem

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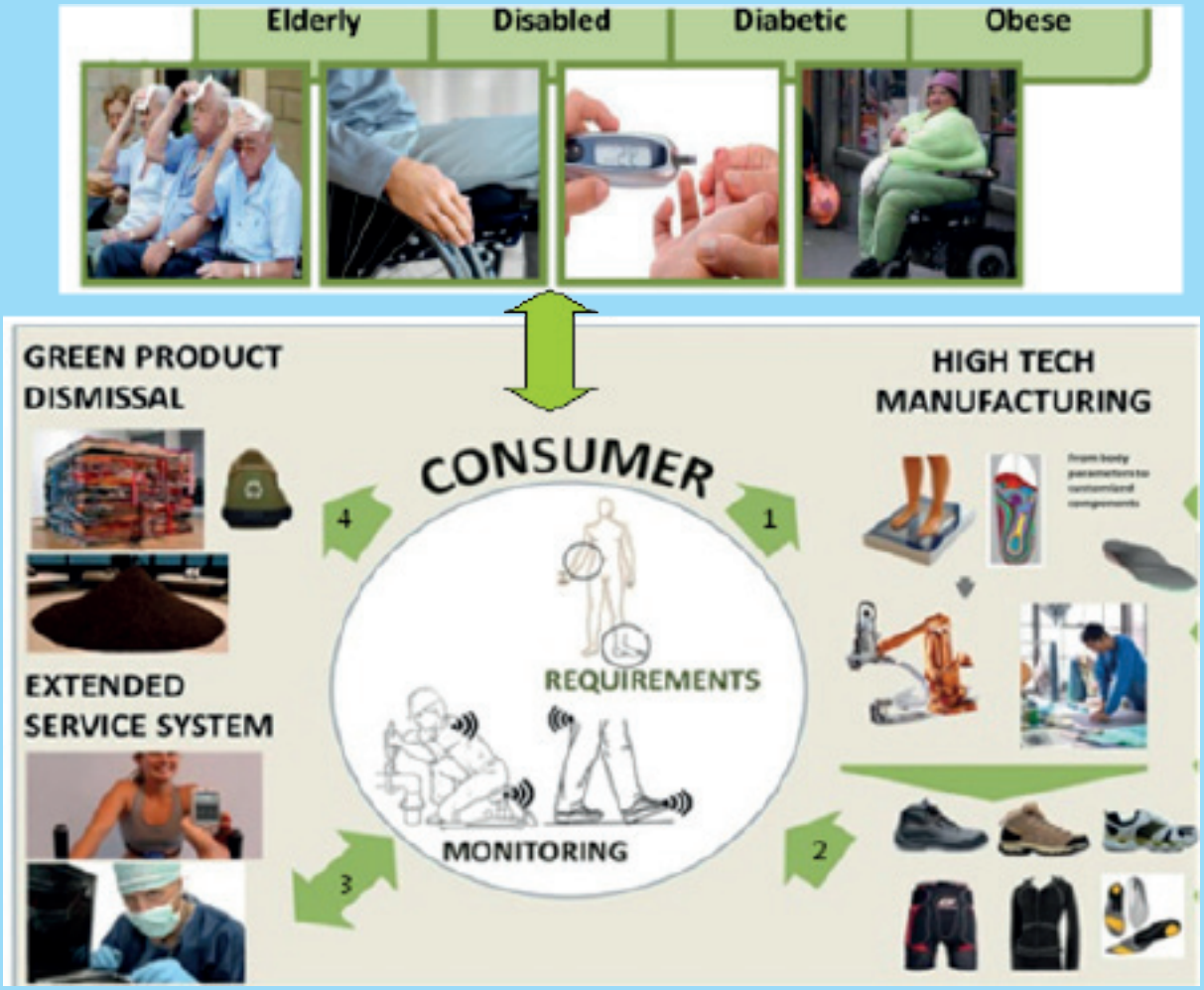

Developing new process technologies in order to realize a new generation of customized, eco-friendly, safe, healthy and smart work wear and sportswear products for elderly, obese, diabetics and disabled people

MY-WEAR

Customized Green, Safe, Healthy and Smart Work and Sports Wear

Project Objectives and Results

Social phenomena like aging, growth of obese people and increased sensitivity towards disabled, diabetics people, together with eco-friendly products, are new challenges to find fitted solutions for Sport and safety equipment.
Also the adoption of customer-driven production methodologies and technologies is a key strategy to improve the competitiveness in the current market scenario.
To achieve this strategic vision, the project addresses the following sub objectives:

- Integrated Data Platform, to gather and manage customer data;
- Technologies for constant monitoring, over long distances, of customer bio-metric parameters;
- Developing new adaptive production systems & processes for the production of customized goods;
- Efficient and controlled use of “light” biodegradable materials and integrated LCA methodologies.

Project coordinator contact

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The Net-Challenge Framework enables SMEs to join forces to design and deliver complex and customized products.

The Net-Challenge Framework was validated in three different industrial scenarios from the textile and apparel, footwear and machine tools.

Net-Challenge

Innovative networks of SMEs for complex products manufacturing

www.netchallenge.org

Project Objectives and Results

The Net-Challenge project's main goal is to support the creation and management of non-hierarchical business networks where SMEs can join their competencies and resources to succeed in the global market in the design and manufacturing of complex products. These business networks and market focus is expected to ensure quick response, fast time to market, differentiated products and services and competitive prices.

To this end the Net-Challenge project designed, developed and validated an innovative and integrated framework that helps SMEs to:

- Manage and develop business communities that provide a suitable environment for collaboration, by facilitating communication, information sharing and partner search;
- Create and manage collaboration projects for two relevant scenarios: one-of-a-kind and mass customisation of complex products.

The Net-Challenge framework includes a Methodology, Reference collaboration processes and ICT decision support tools, including modules for business communities' management, collaborative product definition, collaborative operations planning, event management and performance management.

The Net-Challenge results were tested and demonstrated in real business cases from the Textile and apparel (in Portugal), footwear (in Italy) and machine tools (in Spain) industries. In each of these business cases two industrial companies belonging to the project consortium (six user companies in total) used the Net-Challenge framework to create and activate a business community with their key business partners and to manage collaboration projects related to the design, manufacturing and delivery of complex or customized products.

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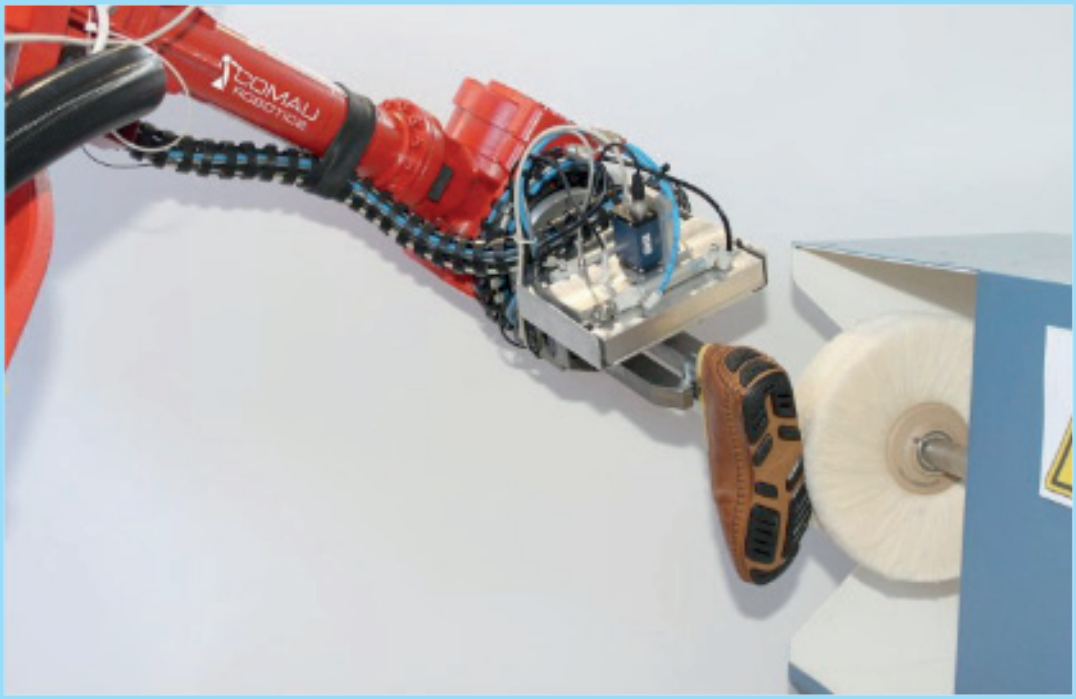
Manual Operation



Robotized polishing operation

ROBOFOOT

Smart robotics for high added value footwear industry

www.robofoot.eu

Project Objectives and Results

The project is promoting the introduction of robotics in high added footwear industry, characterized by manual operations huge variability in the number of models produced each season and the complexity to automate the production processes.

To achieve this objective the project is pushing mainly in the following areas:

- Robot Programming: to create specific tools that allow generating robot programs off-line, as well as promoting the use of advanced manual guiding devices.
- Programming by demonstration is also addressed in the context of multifinger based manipulation.
- Robot Controlling: to use machine vision and force control to generate and adapt robot trajectories.
- Manipulation: to manipulate non-rigid objects by means of multifinger grippers.

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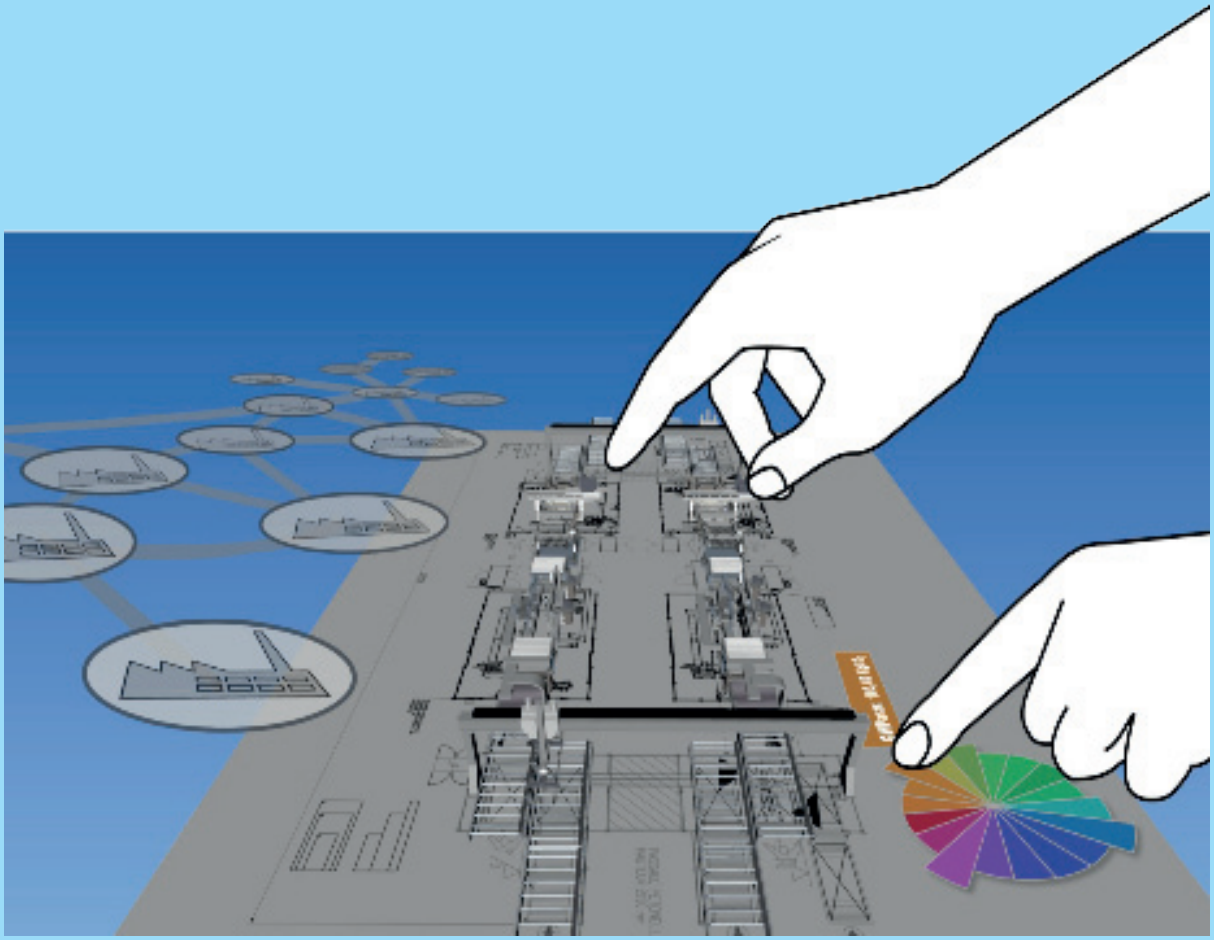

SCMS delivers Technologies and Tools for the design and implementation of Sustainable Mass Customised Product, Factory and Supply Chain

S-MC-S

Sustainable Mass Customization - Mass Customization for Sustainability

www.mckn.eu/SMCS

Project Objectives and Results

To adapt to global competitive pressures, European Industry must develop methods and enabling technologies towards a personalized, customer oriented and sustainable manufacturing. To this end, S-MC-S defines and researches a new production paradigm: Sustainable Mass-Customization.

S-MC-S addresses Mass Customization as one of the main driving forces to achieve effective Sustainability, and thus a key enabler to implement this envisioned personalized sustainable production. Indeed, manufacturing is growing beyond the economic context, into a social and ecological phenomenon, motivating companies to move towards sustainable manufacturing: manufacturers are thus demanded to merge the need to be reactive towards customer needs and wishes (customized products), with the requisite to be proactive towards ecological and environmental impact (sustainable products).

S-MC-S addresses this challenge by promoting 4 RTD Pillars:

Design Tools: defining methodologies and tools capable to manage growing complexity of product, production and supply chain configurations imposed by MC implementation in a networked environment.

Assessment model: defining the assessment model needed to evaluate the impact of production systems and different supply chain configurations.

Business Model: defining the framework and strategies for creating economic, social and ecological value through the systematic implementation of S-MC-S paradigm.
New specific MC technology: researching pilot MC enabling technology in 3 different sectors, to support manufacturing transition towards sustainable MC (leather; furniture; stone)

Project coordinator contact

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SERVIVE introduces an integrated **Mass Customization solution** covering supply chain issues (sourcing, quoting, production planning, etc.) to technical sales support issues (configurators, visualization, usability, etc.) to commercial support (POS, see/fee/try, marketing, etc.) for successful mass customized fashion products in large volumes.

SERVIVE

SERVice Oriented Intelligent Value Adding nEtwork for Clothing-SMEs embarking in Mass-Customisation

www.servive.eu

Project Objectives and achieved Results

SERVIVE is an EU funded project within the 7th framework and intends to implement Mass Customisation throughout Europe on a wide and large scale. It is resident in the fashion and apparel industry and its main goals are:

- the enlargement of the assortment of customisable items currently on offer,
- the drastic enhancement of **including the consumers to the design process** (co-design aspects) improving both garment functionality and fun, and
- the development and testing of a new production model based on decentralized networked SME cells.

Many research projects lack the transfer from "scientific research" to "making money in business". After three years, EU funded project SERVIVE now has to prove its promise to build a platform that connects Mass customization suppliers and vendors within the apparel industry.

Logging into the SERVIVE community offers a world of sites like Amazon and Facebook combined: **Shop mass customized apparel from different suppliers, have your own profile and show your configured products to friends.** Besides the fact that you are able to shop mass customized products instead of mass produced ones, you are also able to build up a virtual twin of yourself, have a look at the clothes you desire on your avatar and get advice from experts on your looks.

And what's in there for companies? Joining the SERVIVE portal enables you to address your offer to a huge interested crowd. Instead of developing your coding and every service by yourself, you can use already approved ones that customers know and appreciate. Especially for small and medium sized enterprises this is a chance to reach out to many potential customers and enables SMEs to concentrate on their key capabilities: what do we want to offer and how do we want to produce it? Cross-selling possibilities will raise the amount of purchased goods and a comfortable configuration process with a connected order and stock system smoothes the whole data flow.

Project coordinator contact

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Personalizing footwear at retail to user's foot morphology using an innovative shape memory material able to recover its original shape.

SHOPINSTANTSHOE

Development of a cost-effective footwear based on shape memory materials to provide an instant fitting personalization service at the retail shop for enhancing user's comfort

www.instantshoe.com

Project Objectives and Results

Feet diseases represent an important social problem, being the female population the most affected. Several foot deformities are mainly caused by continued use of inadequate footwear, marked by aesthetics and fashion trends. Woman fashionable footwear demands a more accurate fitting to guarantee footwear functionality and comfort, but morphometry differences within users makes it very hard to provide an adequate fitting in a personalized way.

The main objective of this project is to develop a novel, ergonomic, customizable and fashionable women footwear upper and an innovative service providing customers with personalization of the shoe fitting at the retail shop.

After taking some measurements from the client's feet, a shaping system will personalize the footwear to provide a suitable fitting. If the client finally does not want to buy the footwear, it can be recovered to its original shape by warming it up during a few seconds.

Project coordinator contact

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SmartNets
Highly Innovative Products by Collaboration

SmartNets

Transformation from Collaborative Knowledge Exploration Networks into Cross Sectoral and Service Oriented Integrated Value Systems

www.smart-nets.eu

Project Objectives and Results

The overall objective of the project is to help companies in collaboratively developing and producing highly innovative products and services. To achieve that, SmartNets offers appropriate, SME-suited instruments to support them in building up networks, in mastering the challenges in each phase of the product or service life-cycle and in transitioning from development to production.

SmartNets develops methods and tools that offer support from an organisational perspective (e.g. working in virtual teams), from a knowledge point of view (e.g. sharing and protecting knowledge in collaboration) and regarding information and communication technologies (e.g. establishing and maintaining reliable information exchange).

Within the project, these methods and tools will be evaluated in the collaborative development and production of a motorcycle helmet, a medical device and interior textiles.

Project coordinator contact

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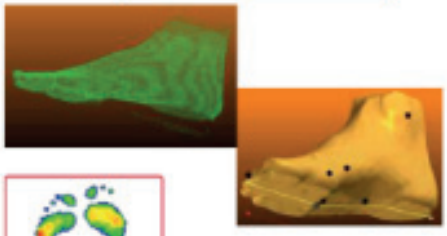
EUROPEAN COMMISSION

SSHOES

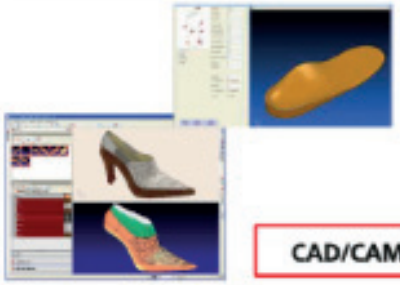
SPECIAL SHOES MOVEMENT
Grant Agreement No.: NMP-2008-SME-2-R.229261

Sustainable, consumer-centred footwear and insole production for diabetic feet

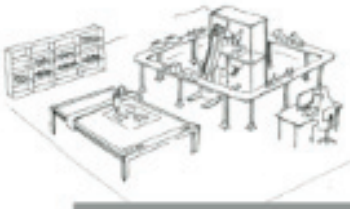
MATERIAL TESTING AND DEVELOPMENT



SIMULATION

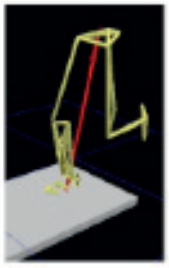


CAD/CAM



Sustainable, consumer-centred production

BIOMECHANICS



Coordinator: INESCOP

Partners: C2i2, ACCN, Soletec, duna, University of Salford Manchester, KOPITARNA

www.sshoes.eu

SSHOES

SPECIAL SHOES MOVEMENT

www.sshoes.eu

Project Objectives and Results

Development and demonstration of new sustainable production capabilities for diabetic foot, based on product differentiation and customisation in order to deliver high quality products to individual consumers.

Project results

- Innovative 3D foot digitiser and plantar pressure measuring system.
- Integration of design and customisation tools based on biomechanical and biomedical aspects, also taking style and aesthetics into consideration.
- Adaptive production processes and technologies that guarantee functionality, quality, performance and health-care.
- Devices with innovative sensing and actuating functionalities aiming to improve comfort, controlling and modifying the product characteristics accordingly.
- Innovative high-performance materials with self-adaptive properties to optimise fitting to the consumer's biomechanics, guaranteeing comfort and aesthetics quality.
- Flexible manufacturing robot cell for bespoke footwear lasts and insoles integrated within the SSHOES Platform.
- Development of MiniLab, an easy-to-use, portable system for the capture and analysis of the foot and ankle biomechanics during gait.
- KB engineering framework able to manage diverse manufacturing and design configurations, integrating the different software tools, knowledge and devices in the SSHOES platform to demonstrate the use in real conditions and the advantages of the new system.

Project coordinator contact

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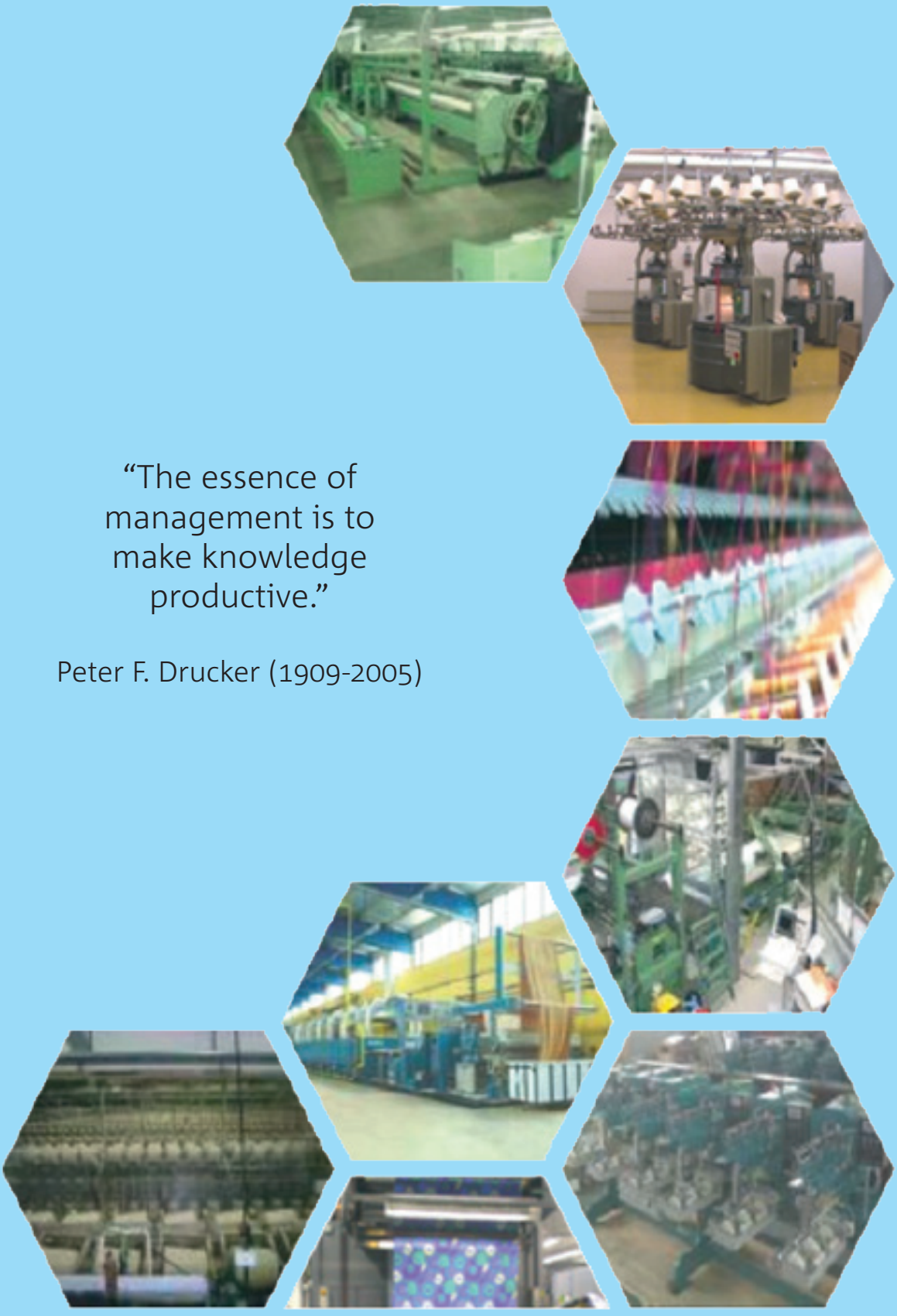

"The essence of management is to make knowledge productive."

Peter F. Drucker (1909-2005)

TexWIN

Textile Work Intelligence by closed-loop control of product and process quality in the Textile Industry

www.texwin.eu

Project Objectives and Results

In order to succeed in markets with fierce competition, many European SMEs focus on complex high-quality niche products, flexible made-to-order production, as well as small batch production. The set-up of machinery, especially for products consisting of non-homogeneous and/or natural materials like textiles, is time consuming which hinders productivity.

Objectives
Through the reduction of stop times, set-up times, and waiting times, TexWIN boosts the productivity of companies specializing in niche production by up to 20% and reduces machinery down-time by one third. This increases not only process flexibility but also reliability.

Approach and Results
TexWIN provides a two layered hierarchical feedback control structure. The first layer supports machinery set-up and take-down processes using an adaptive case-based machinery controller that suggests the best processing settings based on quality, setting-up, and execution efficiency. The second layer addresses the information flow within companies and the best use of resources for orders. To improve process scheduling and event based coordination employees are supported by a factory controller enhanced by Artificial Intelligence.

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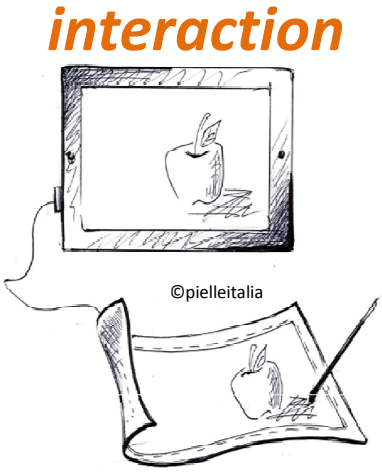

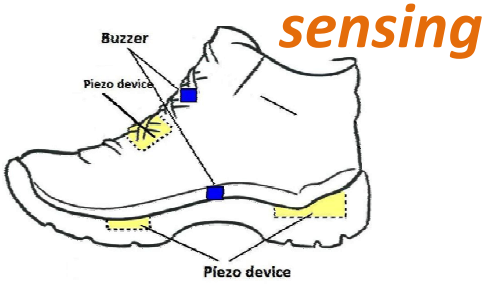

" ...introducing advanced technology into simple everyday products, towards a next generation of fully integrated smart textiles... " [1]

1. Pictures are based on models expressly created by TIIWS partners. Any unauthorized use of the picture or the models is strictly prohibited.

TIIWS

Thin multilayered PVDF based piezo co-polymer for Textile Integrated Intelligent Wearable Self-sustained monitoring and safety applications in garments and footwear

www.tiiws-project.eu

Project Objectives and Results

The increasing demand for human/device interaction in everyday wearable products brings the need of preserving comfort and ensuring effective performances in energy generation and durability. The actual challenge for implementation of smart solutions onto flexible substrates is to increase performances optimizing ergonomics (breathability, drapeability, ...).

TIIWS aims to develop composite piezopolymeric systems, to be integrated into wearable and everyday textile-based products for self-sustained safety, sensing and energy harvesting applications.

The project aims to achieve high level integration of energy generating devices in textiles, enhancing processability as well as device performances. The development goes towards a new concept of smart textiles, in which the functions are completely embedded into textile substrates with increased comfort and new possibilities for flexible confectioning and use. Innovative piezopolymer formulation will also enable increased performances, with also new possibilities for automated industrial manufacturing.

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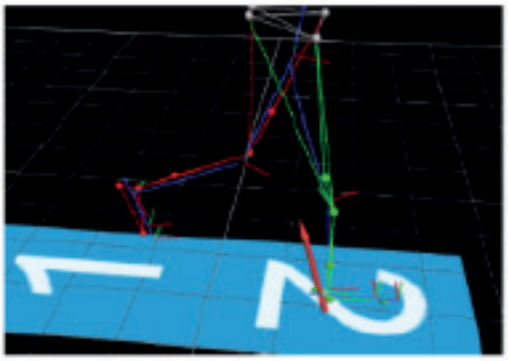
ULTRAGRIP

Development of a high grip designing tool

EUROPEAN COMMISSION



OBJECTIVES:

To develop guidelines and software for footwear outsole and flooring design to optimise slipping.

ACTIONS:

- Definition of the range of footwear-sole and floorings typologies
- Sole-contaminant-flooring interactions technology
- Analysis of the slip testing methods
- Analysis of the slipping performance durability
- Development of slipping behaviour modelling software
- Harmonization of footwear and flooring requirements according to real applications

PROJECT COORDINATOR	SME PARTNERS	RTD PARTNERS
INESCOP	Cauchos RuizAlejos, KELME, vernis, Base, exagres, VENDER	INESCOP, jtc, ZAG

ULTRAGRIP

DEVELOPMENT OF A HIGH GRIP DESIGNING TOOL

www.ultragrip.eu

Project Objectives and Results

The **main objective** of the project is to **develop guidelines and specific software which could be used as a design tools for soles and floorings to optimise their performance in relation to slipping.** To achieve this it is necessary to generate information and develop advanced technologies for obtaining data about friction processes which are currently not available. These would thus be the foundations of the development of such software. This software will be able to predict the slipping behaviour of a product before its manufacturing, in the design phase of the product.

Considering the project main objective, the following **main results** are identified:

- Correlations between the assessment methods used in the footwear and flooring sectors.
- Reference materials, both for flooring and footwear, to be jointly used in both sectors.
- Technology for high-speed image acquisition in the sole-contaminant-flooring interface.
- Image acquisition and analysis software for the high-speed recording technology.
- Knowledge about the existing interactions between sole-contaminant-flooring in a molecular and mechanical scale.
- Assessment of performance durability and maintenance with reference to the wear processes, surface contamination, etc.
- Novel real-scale wear simulation technology for footwear and floorings.
- Slip behaviour predicting software.
- Guidelines for recommendations-requirements on improving slip resistance for both sectors.

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4. Acknowledgments

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More information about FP7 is available at http://cordis.europa.eu/fp7/home_en.html

PROsumer.NET Partner Projects

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