



Science For A Better Life

MaterialScience

# European Futurists Conference Lucerne 27./28. October 08

From visions to products

Corporate Development - New Business  
Creative Center  
Eckard Foltin



# Bayer MaterialScience



## From visions to products

European Futurists Conference Lucerne

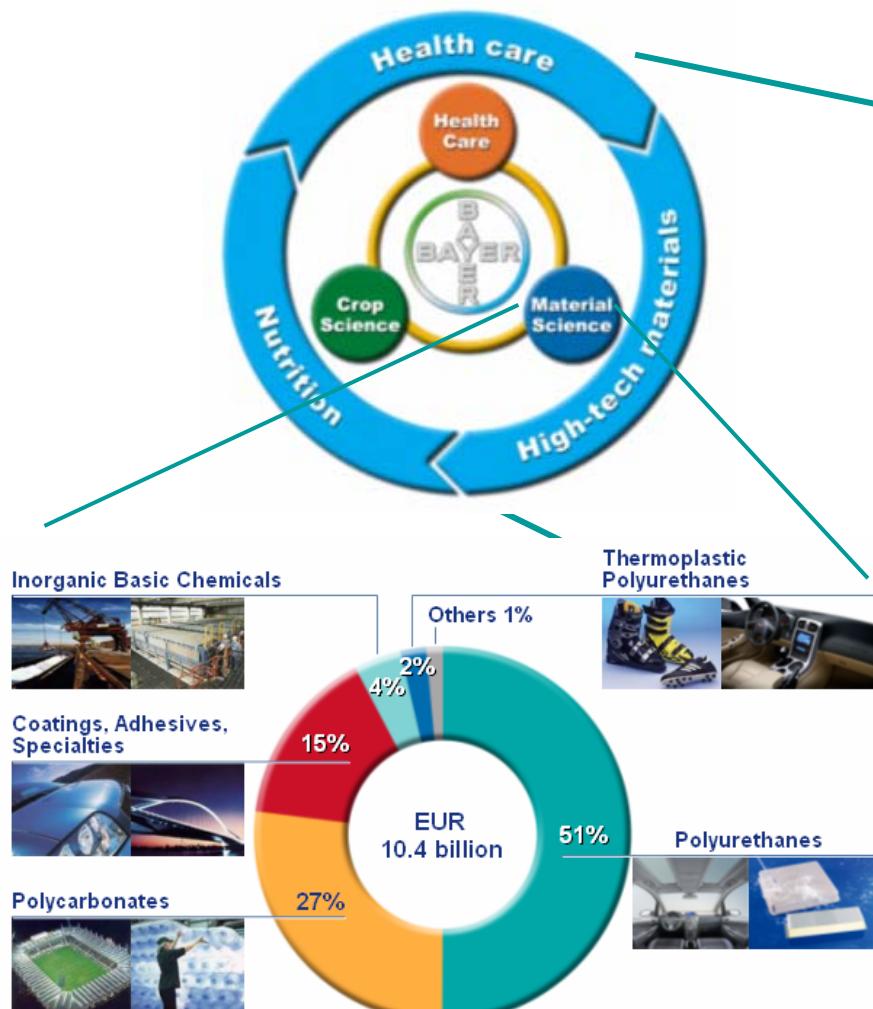


A shiny silver CD-R disc is resting on a bed of clear plastic beads. The disc has a red label in the center with the text "Compact Disc Digital Audio Recordable" and "makro". The background is a dark, reflective surface covered in numerous small, translucent beads.

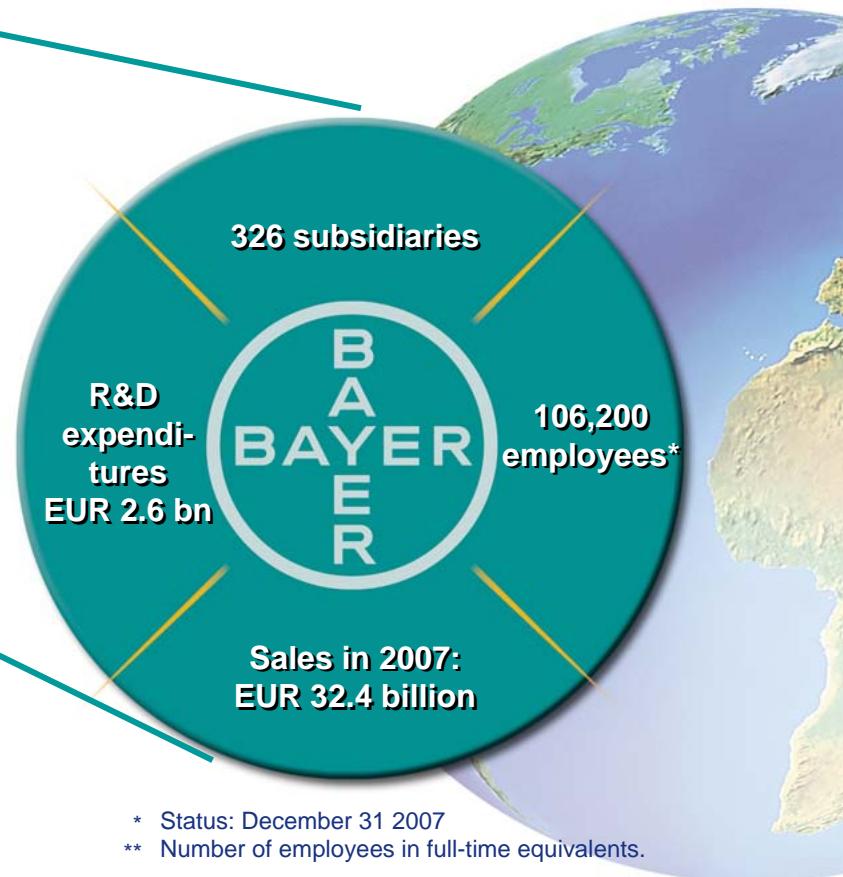
Yes you do!

# The Bayer Group: Bayer MaterialScience AG

Innovation-driven and technology-intensive  
**“Science For A Better Life”**



Sales in 2007 by business units of Bayer MaterialScience AG



\* Status: December 31 2007

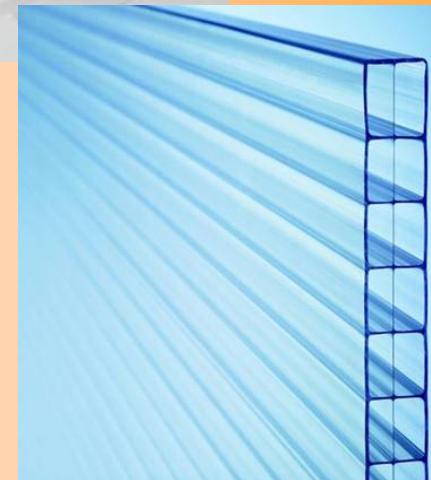
\*\* Number of employees in full-time equivalents.



**Bayer MaterialScience**

# Our role in the value chain: raw materials & semi finished products

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Bayer MaterialScience

# The challenge of today

Abraham Lincoln



**"If you always do  
what you always did  
you will always get  
what you always got."**

crisis

危機

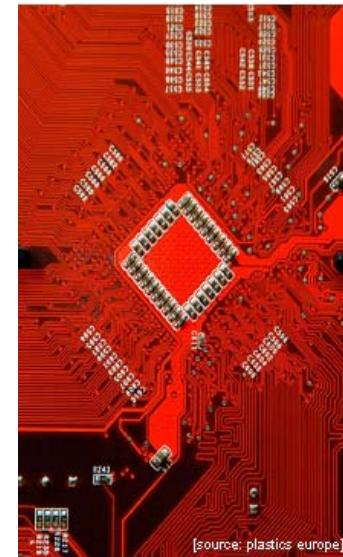


danger



opportunity

# Global Megatrends



**Demographic  
Change**

**Globalization  
Urbanization**

**Global  
Warming  
Energy  
Shortage**

**Health Care  
Revolution  
Interface Man -  
Machine**

**Miniaturization  
Microstructures  
New Technologies**

# Impacts for Bayer

## A Global Challenge: The Growing World Population



Longer life expectancy results in increasing demand for innovative medicine and therapies

**longer life**

Ensure sufficient food supplies while acreage per capita is decreasing

**food**



Supply alternative energy feedstocks such as biofuels to meet the increasing energy demand

**energy**

Reduce greenhouse gas emissions while economies are growing

**emissions**

# Bayer MaterialScience: Sales in 2007 by customer industry\*

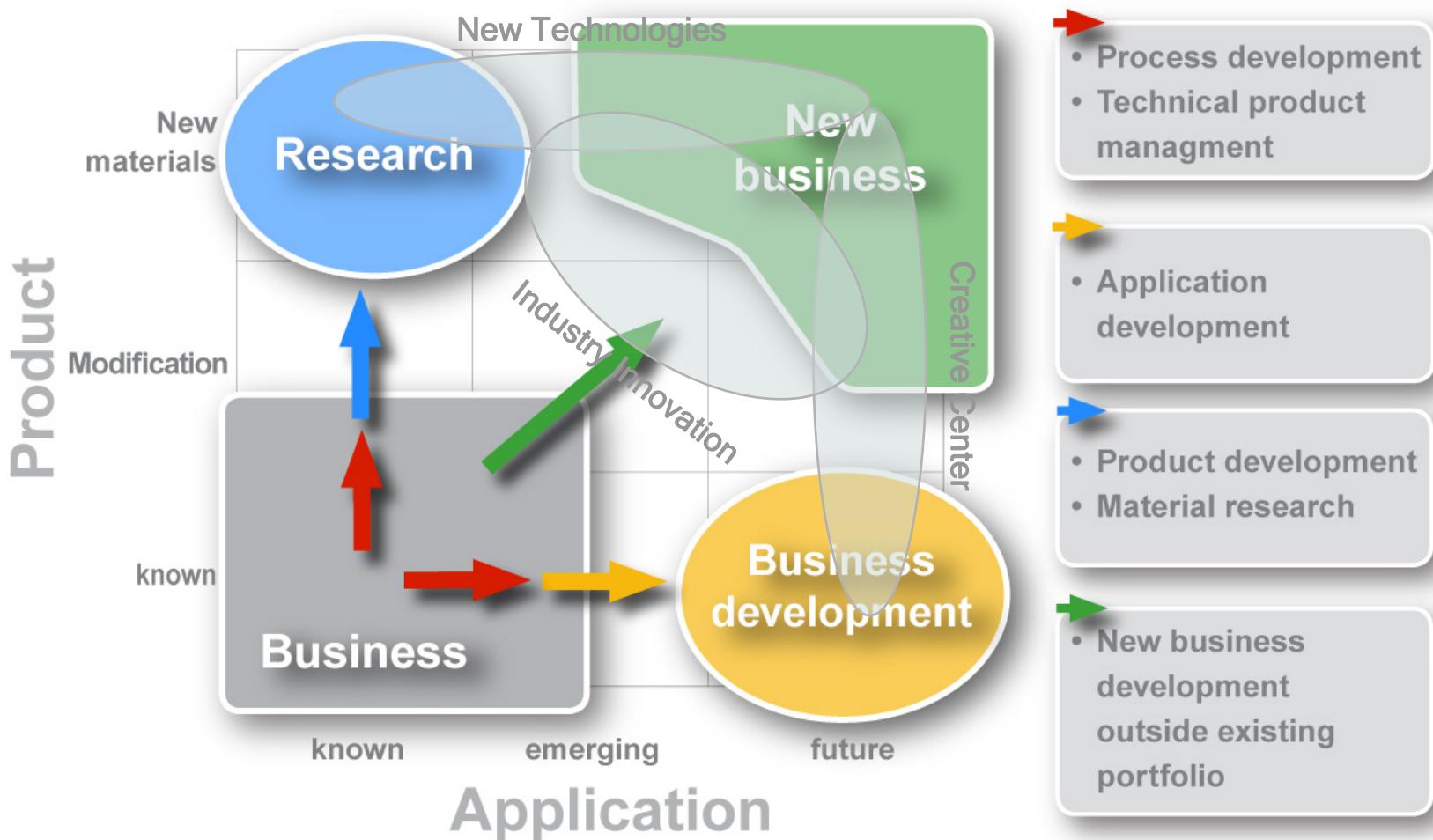


\* continuing business

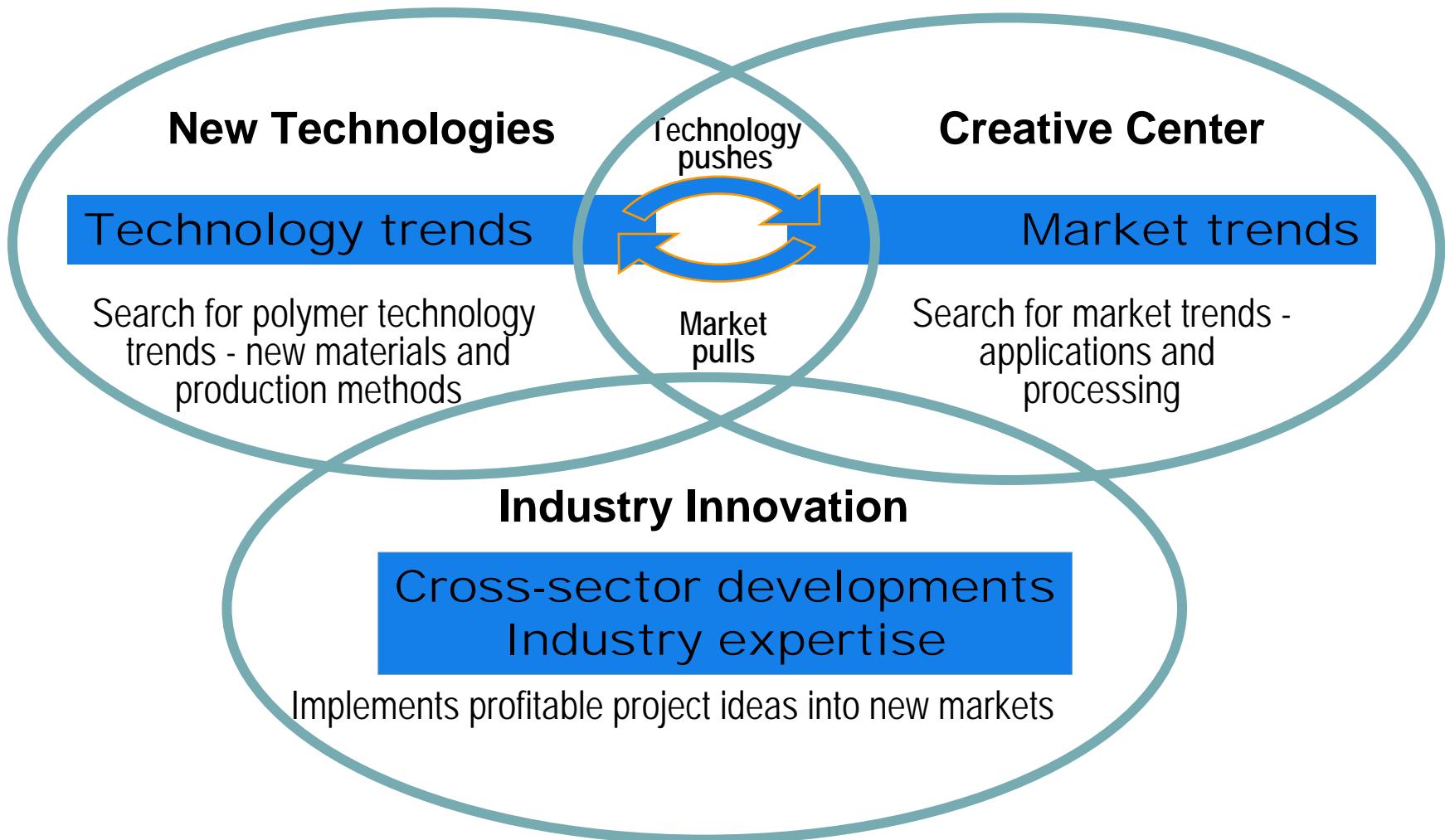


Bayer MaterialScience

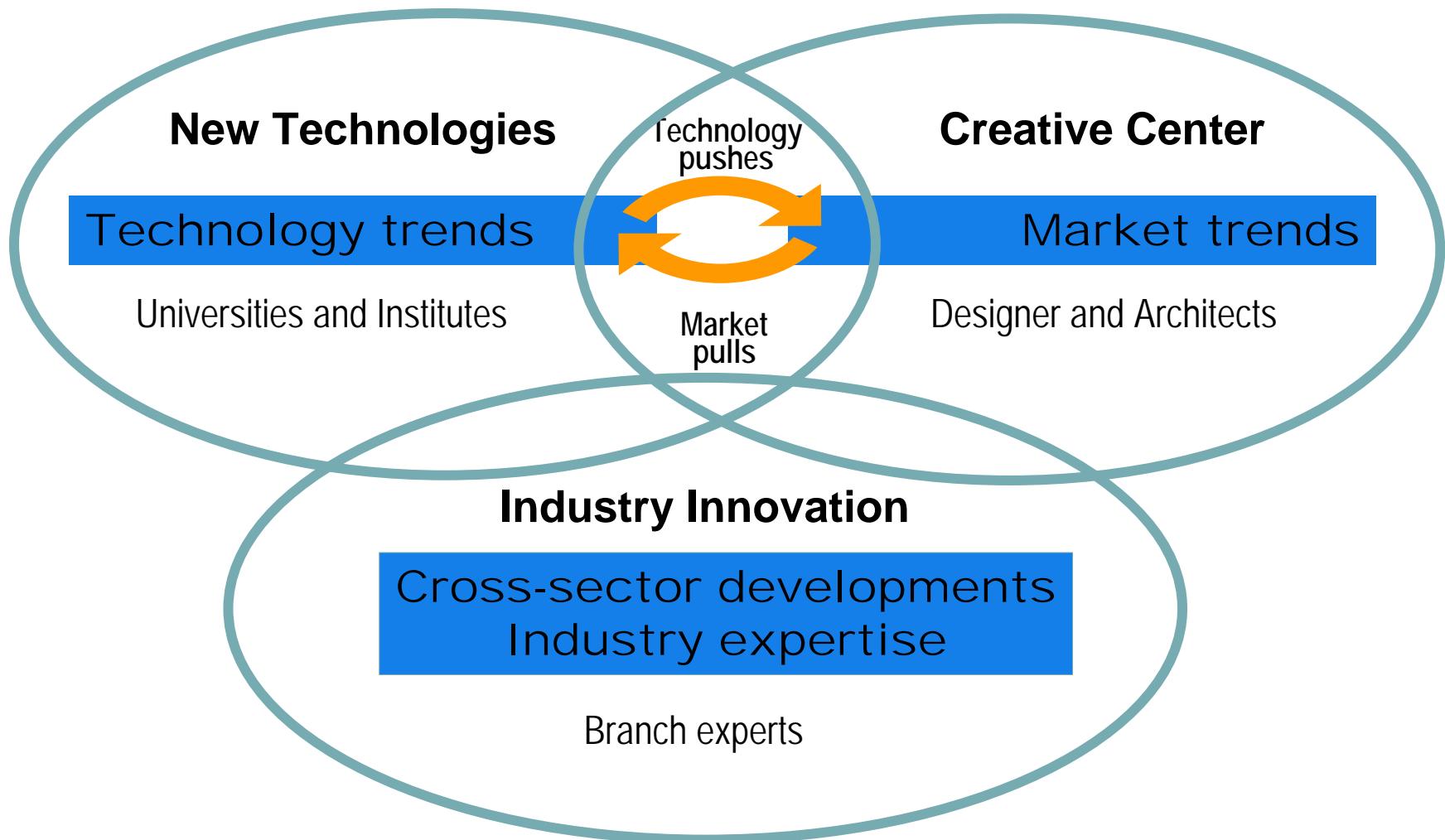
# The Mission of New Business Partner of the Business Units for Innovation



# New Business: Technology and market expertise



# New Business: Supports Open Innovation



# Focus on Scouting areas

Dynamic market changes are shaping the future – driven by values & sustainability



**Technology push meets market pull**



# Hear the grass growing



# Market Approach Scenario Future Living 2020:



Future Living 2020

Bayer MaterialScience

böttcher CONSULTING

di:'Angewandte

Universität für angewandte Kunst Wien  
University of Applied Arts Vienna



HOCHTIEF  
CONSTRUCTION AG



MENSEN  
creatineers.de

PFLEIDERER  
AKTIENGESELLSCHAFT

SONUS  
VISION. EXPERIENCE. SOLUTIONS.

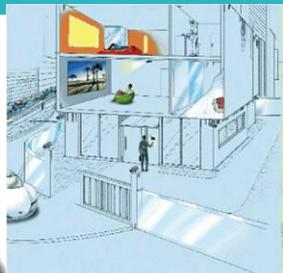
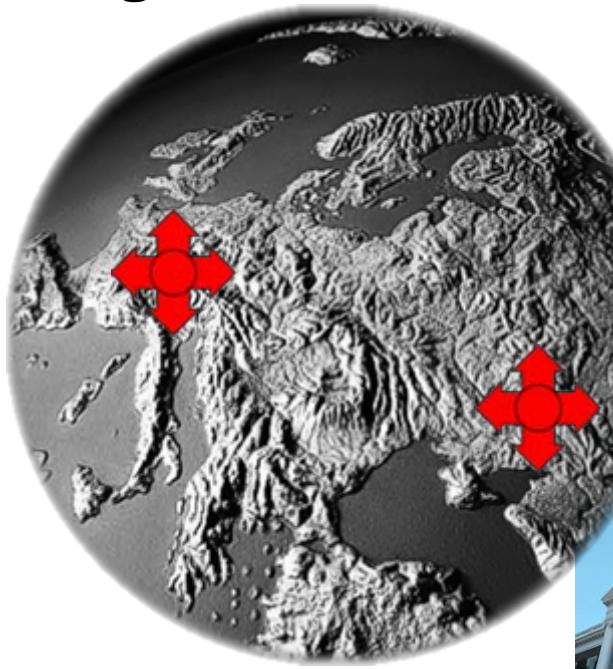


REHAU

Network - Project

# Two different future scopes

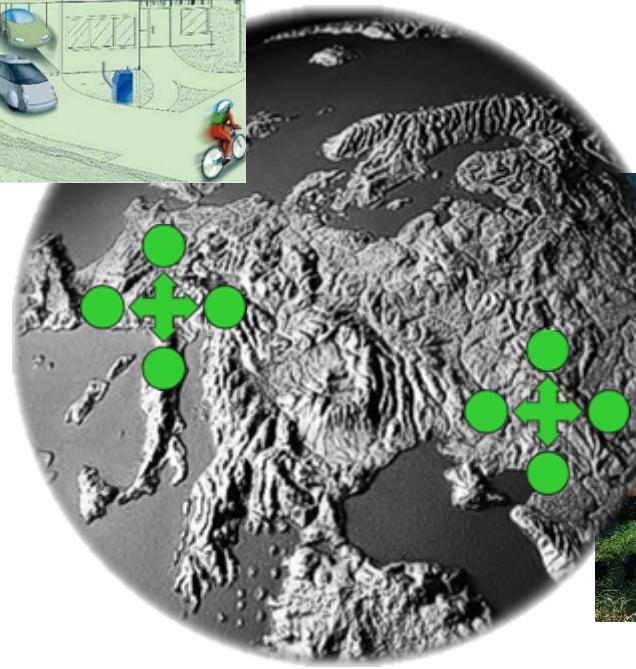
## Oligocenter



### Concentration of

- power
- life
- economic activity
- fragmented society**

## Polycenter



### Regional economic centers

- co-existing under regulated competition
- with original character
- cultural autonomy and individuality
- existing middle class**

# RELEVANT MAJOR CHANGES AND TRENDS

The basis for developing a picture of the future



**VisionWorks Award**  *CargoPacks 2020*

# Open Innovation Approach

**Complementary  
community**



*future\_bizz*

[Home](#) | [Mission](#) | [Community](#) | [Projects](#) | [Process](#) |

The future\_bizz community

GESCHÄFTSIDEEN FÜR ZUKÜNFTIGES LEBEN, WOHNEN UND ARBEITEN

**Knowledge projects**  
**Living environment**  
**Continuity**  
**Setting standards**



# Communicate - Connect – Develop - Create

**Step 1**  
Pictures of the future



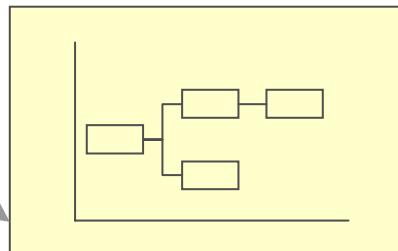
**Step 2**  
Market structure



**Step 3**  
Applications



**Step 4**  
Business Case



Open  
Innovation

Knowledge projects

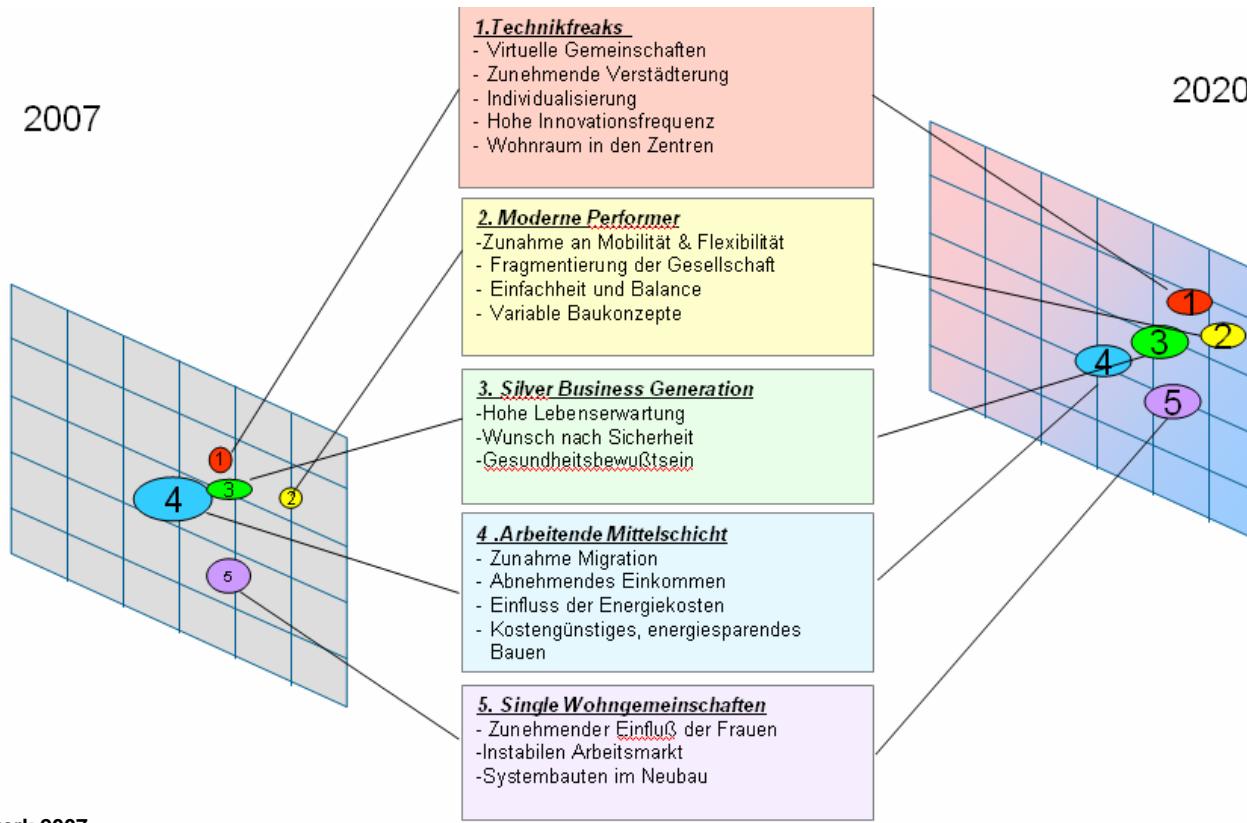
Network projects

„Closed“  
Innovation

Cooperations  
Internal projects

# Change of society in 2020

Change of relevant society groups until 2020. For each society group the *future\_bizz* network defined a typical person. For each person needs are described. The *future\_bizz* network project „Connect Creativity“ will result in scribbles of living environment for those persons.



Source: FutureBizz Netzwerk 2007

# FUTURE CUSTOMERS NEEDS

From milieu studies to the individual customer: The story groups



silver  
generation

Sören Nordstöm, 72, Swedish  
„The silver business generation“

global worker

Hakan Turhan, 22, Turkish  
„The techie“

polyworker

Arantxa Delporte, 50, Portuguese  
„The modern performer“

relationships of  
convenience

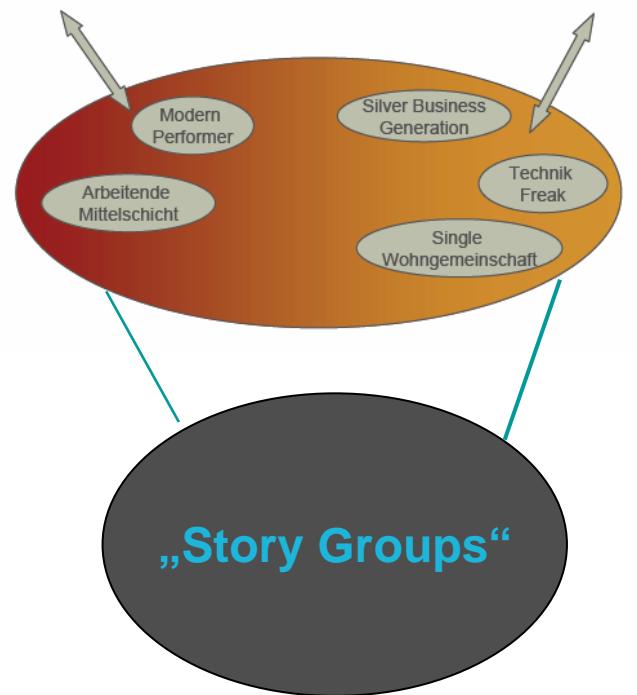
Natasha Sharapova, 38, Russian  
„The single apartment share“

traditional  
middle class

Jaqueline Meyerhoff, 40, German  
„The working middle class“

Polyzentren

Oligozentren



# Milieugroups 2020 > Storygroups

## The Singles Apartment Share

Natasha Sharapova, 38, Russian

Natasha....

... is an Executive Education Designerin

... lives in a Singles Living Center in  
St.Petersburg

... is liberal, self-confident and independent

... is single

... travels a lot for work

... is career-orientated

... is bodily fit

... is active in virtual communities

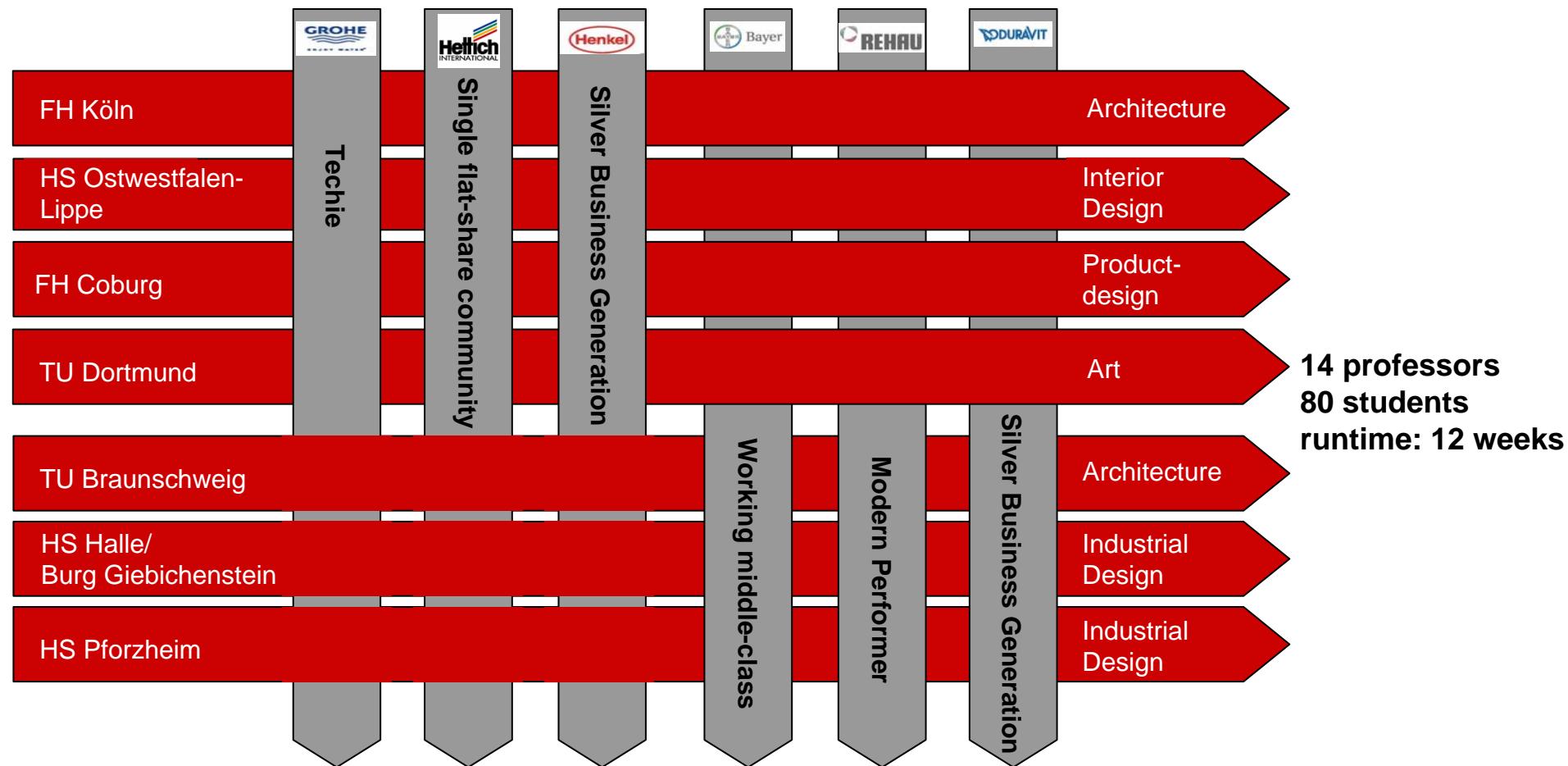
... loves fashion and style

... loves luxury



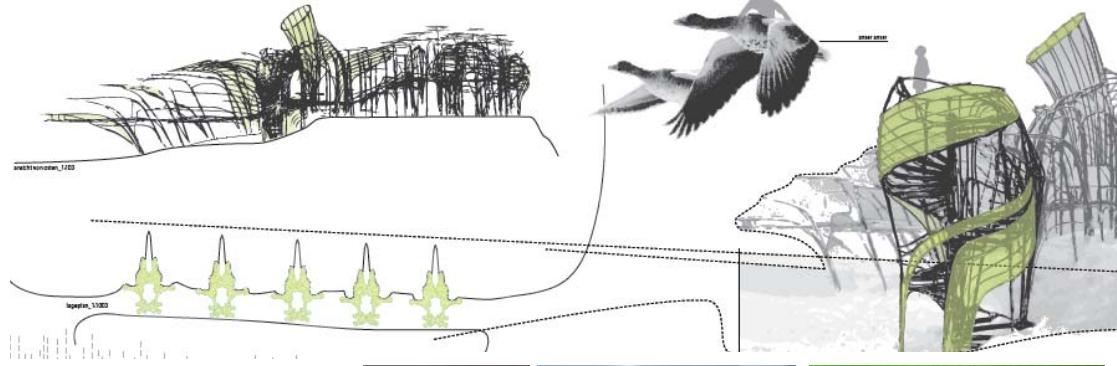


# Connect Creativity – interdisciplinary Network project



**Holistic picture of the living environment of the story group**

# Results – some examples

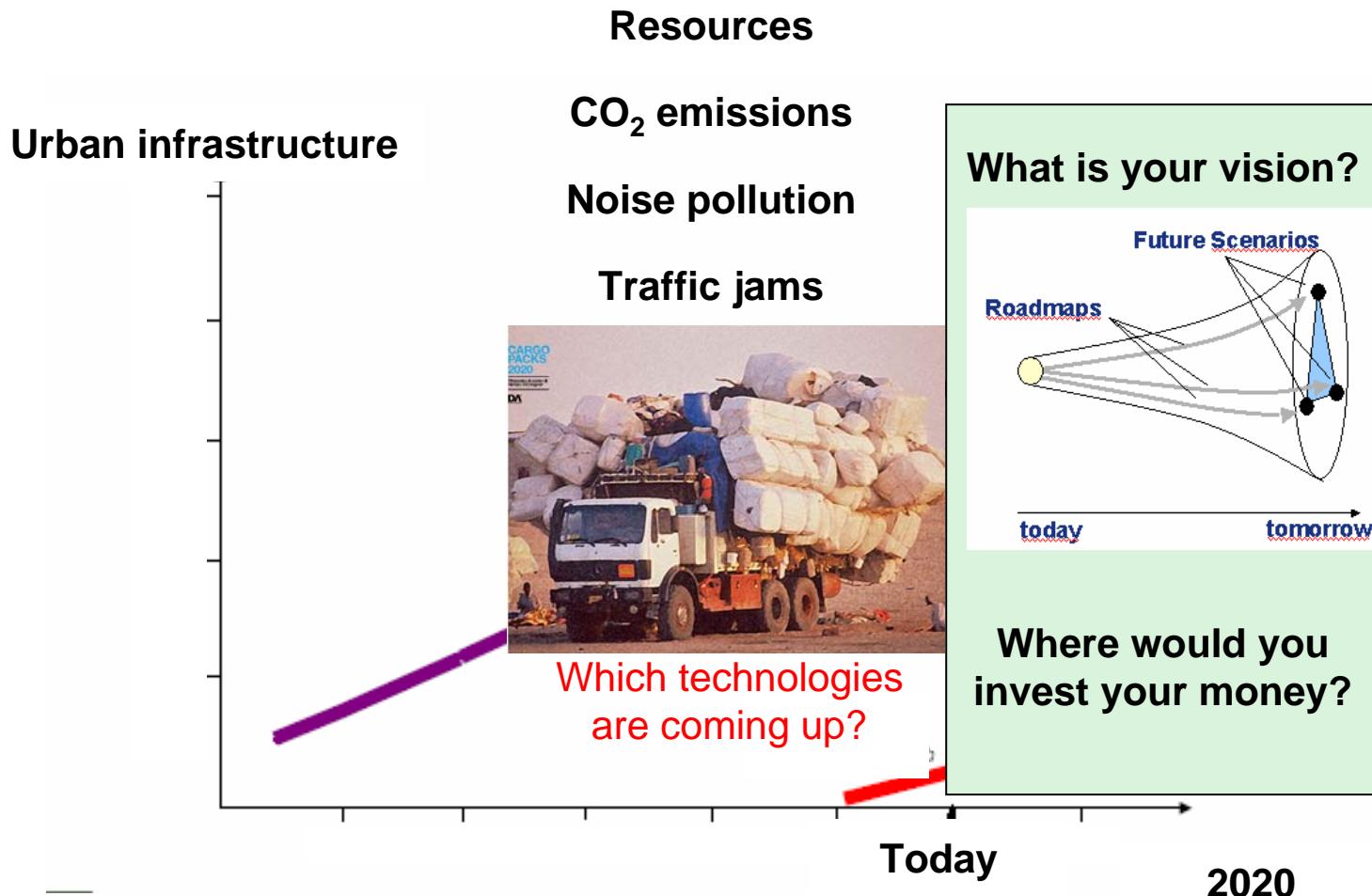


**> 80 design studies  
18 claimed  
4 concrete projects**



# Where does the journey lead?

Motivation: Making future markets transparent for BMS



# Market evaluation for future logistics

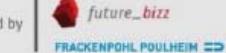


# VisionWorks Award CargoPacks 2008

initiated by



in Cooperation with



## Kick Off Event

October, 23/24,2008, Troisdorf – Innovation Center DHL



### VisionWorks Award

**Award results**  
Diploma thesis  
Target projects

Material libraries  
Feasibility studies  
Technology push projects

**Concepts for roadmaps**

Market & consumer needs

**Visionary prototyping**

Material properties &  
development targets

**Feasibility study**

Product portfolio &  
processing technologies



### VisionWorks Award GargoPacks 2020

# INDUSTRY – Open Innovation Network

## Partner for shaping the future



VisionWorks Award *CargoPacks 2020*





# ORGANIZATION

## Contacts – Process - Methodology – Infrastructure

FRACKENPOHL POULHEIM ☺

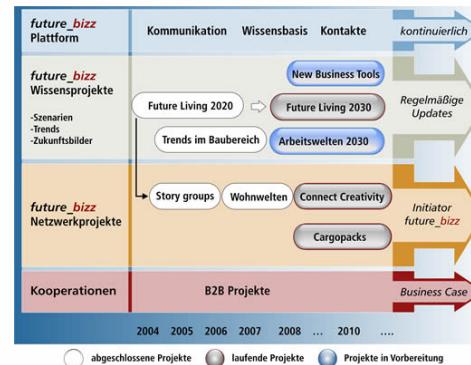


future\_bizz



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### Aktionsfelder:



**AKTUELLES**  
Connect Creativity Leben und Wohnen der Menschen im Jahr 2020 Übergreifendes Projekt ... mehr  
Unter der Projektführung der Bayer MaterialScience AG wird nun schon zum zweiten mal ein Designer Wettbewerb 'VisionWorks Award' ausgelobt powered by future\_bizz



## VisionWorks Award CargoPacks 2020



### Università Iuav di Venezia:

**Andreas Vogler / Giovanni Corsera**

Gemma Caroli

Antonella di Nuzzo

Silvia Bianco

Tommaso D'Olivo

Mariachiara Russo

Daniele Savasta

Luca Buggin

Alessandro Antoniadis

Davide Carlet

Anna Maria Laterza

Michele Manzo

Francesco Santarelli

Claudia Naso Onofrio

Claudia Cantarin



**VisionWorks Award** **CargoPacks 2020**



**Muthesius Kunsthochschule Kiel:**

Prof. Ulrich Hirsch / Burkhard Peters

**Hochschule für Künste Bremen:**

Prof. Andreas Ostwald

**Folkwang Hochschule Essen:**

Prof. Kurt Mehnert / Carolin Schreiber

**Zürcher Hochschule der Künste:**

Herbert Pauser

**Università Iuav di Venezia:**

Andreas Vogler / Giovanni Corsera



**VisionWorks Award** CargoPacks 2020



# CARGO PACKS 2020

## Categories of the Award

### THE LAST MILE

### MULE

MULTI PURPOSE ALL TERRAIN TRANSPORT SYSTEM



THE MULE CAN CARRY ANY KIND OF FREIGHT THROUGH ANY ENVIRONMENT INCLUDING STAIRS AND EVEN OFF-ROAD. IT'S AN AUTOMATICALLY CONTROLLED TRANSPORT FOR AUTONOMOUS DELIVERY.



THE MULE SYSTEM CAN MAKE THE LIFE OF OLD AND YOUNG PEOPLE EASIER. PLC PROGRAM INDEPENDENTLY OPERATING PERIODICALLY TO TAKE CARE OF GOODS WITHOUT TWO PERSONS NEEDED TO CARRY YOUR LOAD.



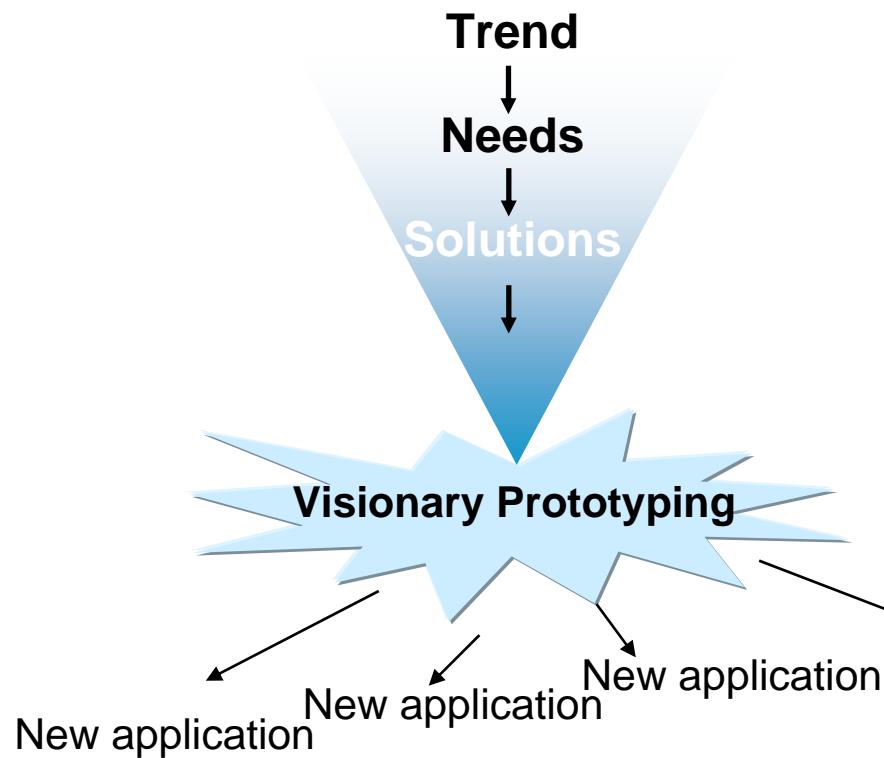
### SUSTAINABILITY

### INTELLIGENT SOLUTIONS



VisionWorks Award CargoPacks 2020

# Visionary Prototyping



## Impulses for new business

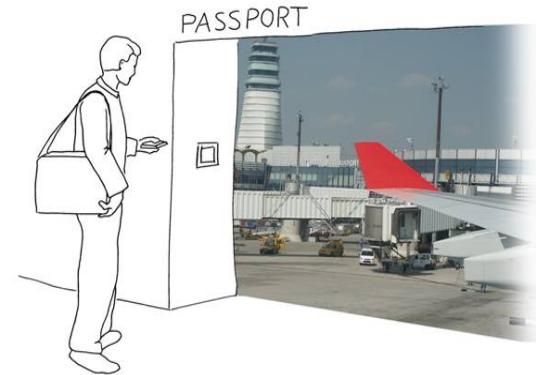
- Emerging markets
- New materials
- New system solutions
- New external partners
- New business opportunities

New application

# Diploma Thesis: „Future Communication 2020“



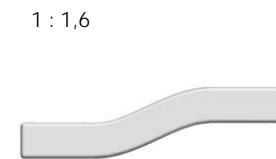
# Target: Solve a portfolio of interactions with one solution



# Form follows function

## The product changes the shape

formale und funktionale Anpassung durch Änderung  
von Interface *und* Geometrie

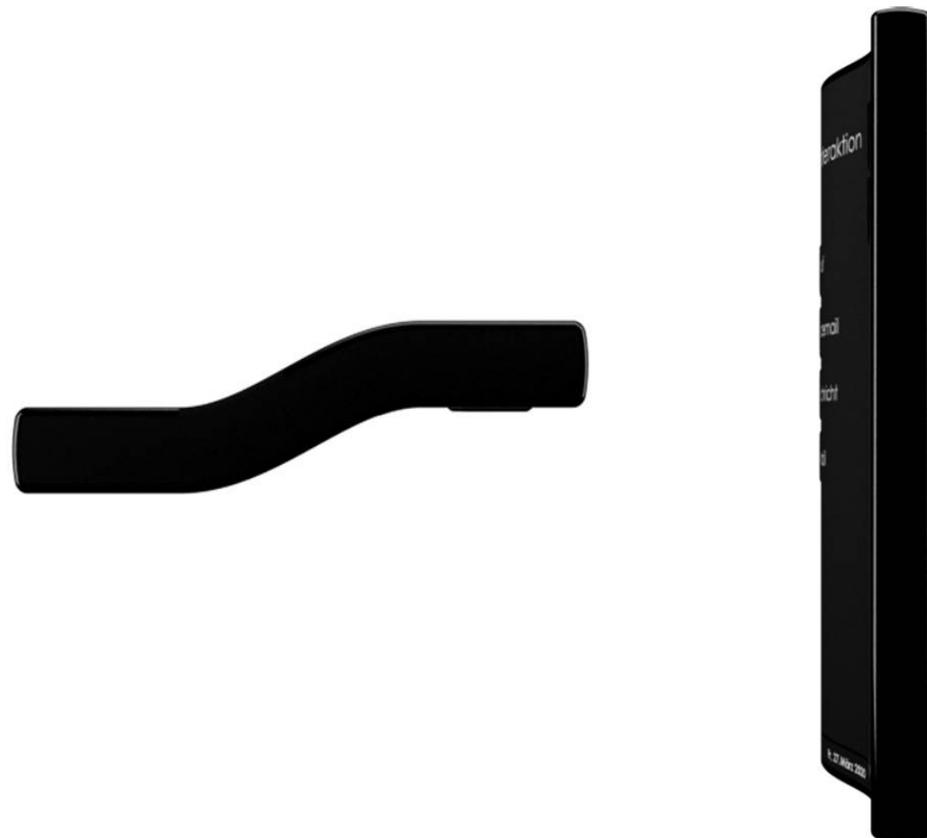




# Electronic Muscles & Printed Electronics



# Electronic Muscles & Printed Electronics



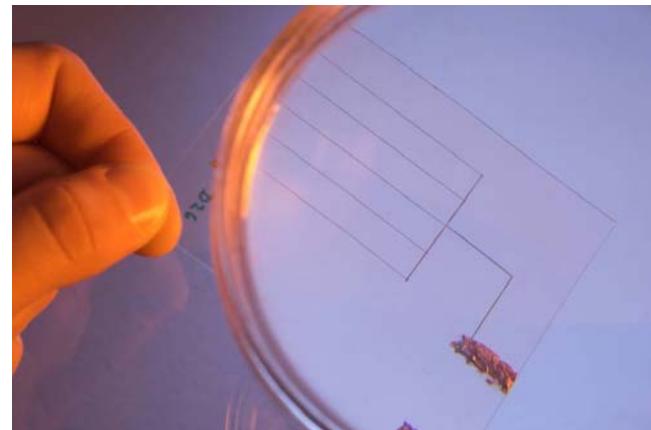
# Electronic Muscles & Printed Electronics

## ElectroActivePolymers

PU-Based



## Bayink® Printed Electronics





# 3D EL – Films lighting solutions



Werkstoffkompetenz in NRW, 17.09.08

Ralph Schneider

CD – New Business – Creative Center

CD - New Busine:



# 3D EL – Films lighting solutions



Werkstoffkompetenz in NRW, 17.09.08

Ralph Schneider

CD – New Business – Creative Center

CD - New Busine:



# 3D EL – Films lighting solutions



Werkstoffkompetenz in NRW, 17.09.08  
Ralph Schneider  
CD – New Business – Creative Center  
CD - New Busine:



# 3D EL – Films lighting solutions



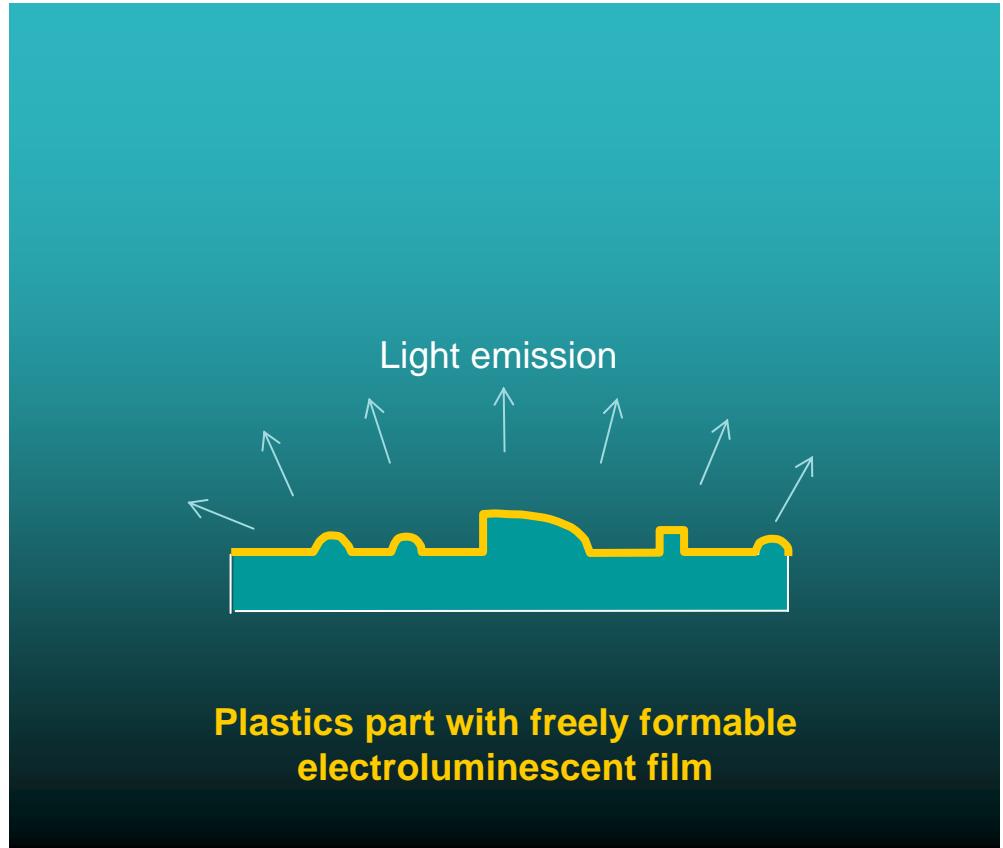
Werkstoffkompetenz in NRW, 17.09.08

Ralph Schneider

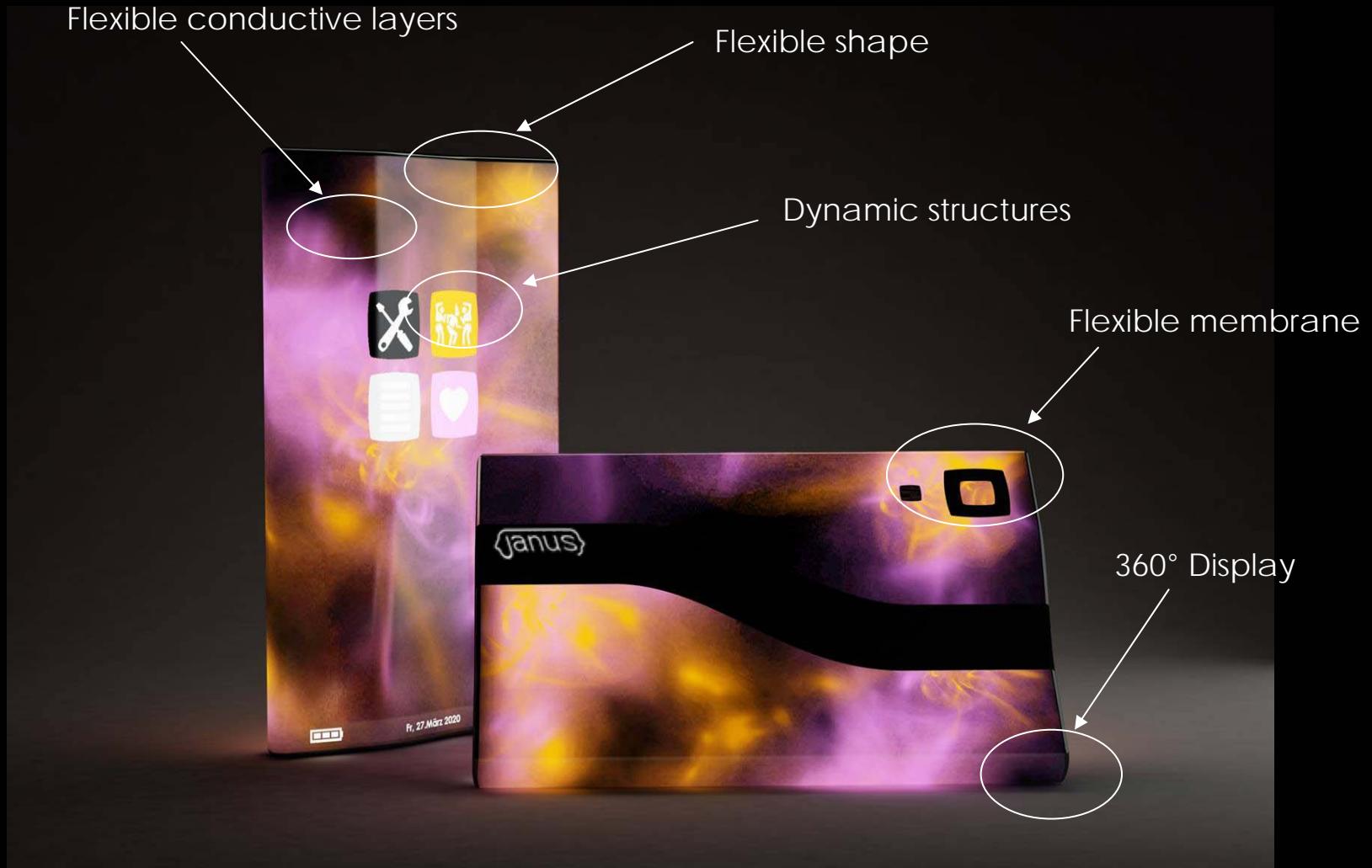
CD – New Business – Creative Center

CD - New Busine:

# 3D EL – Films lighting solutions



**Plastics part with freely formable  
electroluminescent film**



Bayer MaterialScience

BAYINK®

MAKROFOL®

Electronic Muscles

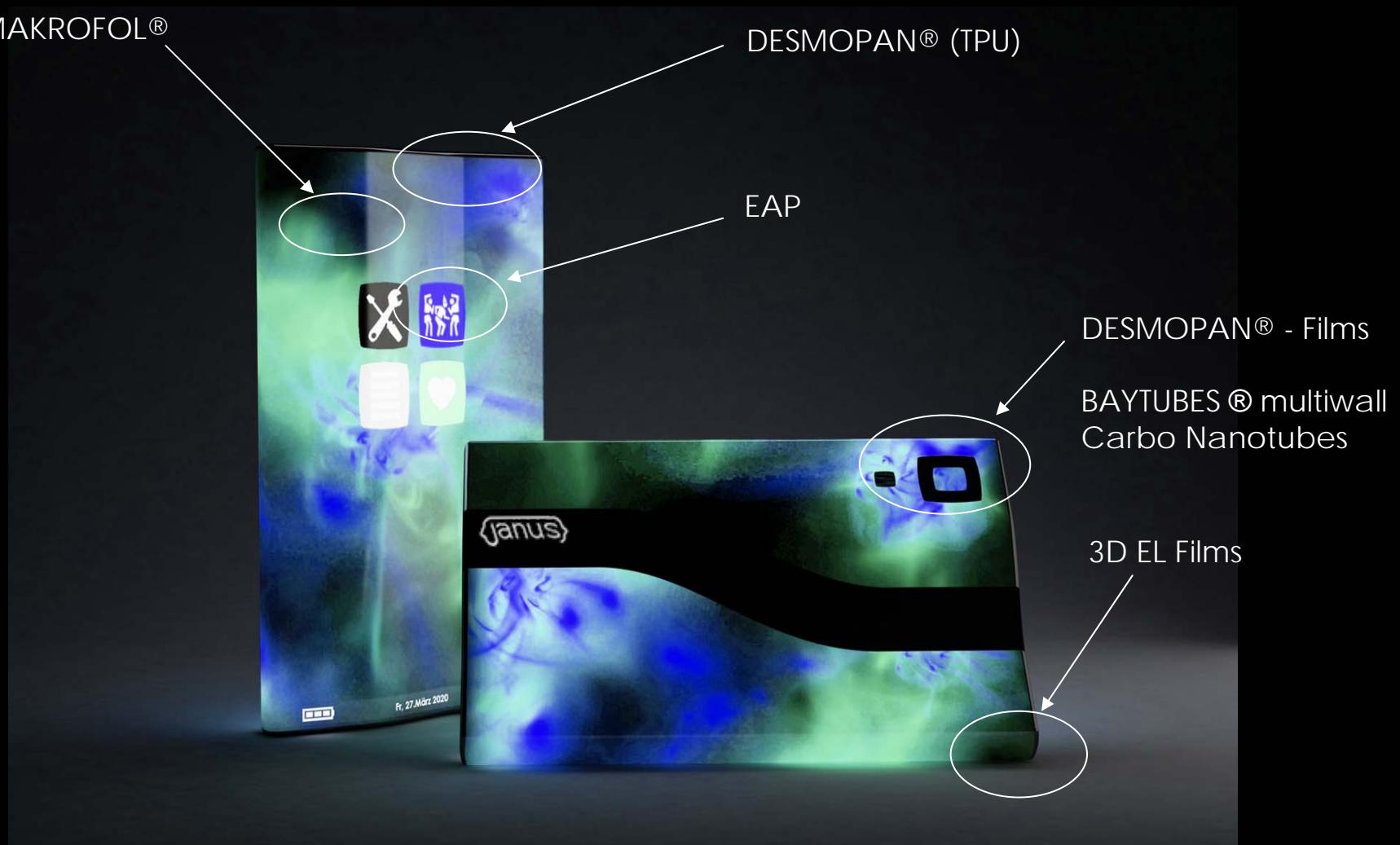
DESMOPAN® (TPU)

EAP

DESMOPAN® - Films

BAYTUBES® multiwall  
Carbo Nanotubes

3D EL Films



Bayer MaterialScience

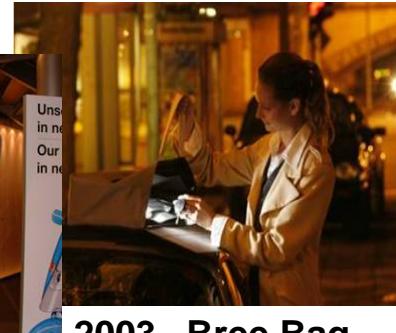
# From Ideation towards business

## New Technologies Creative Center

Technology Push

Market Pull

- trend monitoring
- technology watch
- idea evaluation
- feasibility/ visionary prototype



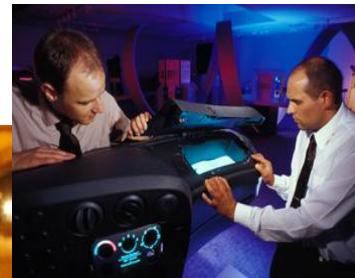
**2003 Bree Bag**  
visionary / emotional  
Prototype

## IND INN

Project Management

Start up

- market feedback
- system solution
- business case
- project candidate
- branch know how
- 1. serial application
- project management business model



**2004 Transformation**  
into real pre-series  
prototype



**2006 Start UP**  
**3D EL - Lamps**

**2005 Senso**  
**Adaptable**  
**interior lighting**  
**Business Modell**



**K 2001 Mister Vision**  
**Feasibility**

# Success factor - interdisciplinary teamwork

## Change culture – on a fast track



12/ 2007

2007



2006



2008

Global Team







Thank You for Your attention!

For further questions:

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