



# Materials

## research and innovation in the creative industries

*Report on the round table discussion,  
Brussels, 5 October 2012*



EUR 25605 EN

Research and  
Innovation

**EUROPEAN COMMISSION**

Directorate-General for Research and Innovation  
Directorate G— Industrial Technologies  
Unit G3 Materials

E-mail: [RTD-NMP-MATERIALS@ec.europa.eu](mailto:RTD-NMP-MATERIALS@ec.europa.eu)  
[RTD-PUBLICATIONS@ec.europa.eu](mailto:RTD-PUBLICATIONS@ec.europa.eu)

Contact: Lula Rosso

European Commission  
B-1049 Brussels

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Edited by

Lula Rosso

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Cataloguing data can be found at the end of this publication.

Luxembourg: Publications Office of the European Union, 2012

ISBN 978-92-79-27538-8

doi 10.2777/30054

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## Background

In the Commission Green Paper<sup>1</sup>, **creative industries** are defined as “those industries which use culture as an input and have a cultural dimension, although their outputs are mainly functional. This classification includes architecture and design, which integrate creative elements into wider processes, as well as subsectors such as graphic design, fashion design or advertising”.

In 2006, the creative industries generated 3.3% of the EU GDP. Between 2000 and 2007, employment in the creative industries grew by an average of 3.5 % per annum, compared to 1 % in the overall EU-27 economy. In 2008, 3.0 % of total EU employment was in creative industries (6.8 million people)<sup>2</sup>. A subsequent study based on a wider definition of the creative industries estimates that the cultural and creative sectors (including software, database activities and on-line distribution of electronic content) accounted for 4.5% of total EU GDP in 2008 and some 3.8% of the workforce.<sup>3</sup>

The creative industries have also shown to be more resilient of other more traditional sectors to the economic crisis. In 2008, when it was registered a 12% drop in the global trade, trade of creative goods and services has been increasing up to 592 b€ by 14% per year in 2002-2008<sup>4</sup>. As the Conclusions on "Creating an Innovative Europe" (May 2010)<sup>5</sup> already pointed out, non-technological innovation, including design, innovation in services as well as culture-based creativity, is an important tool for competitiveness, growth and quality of life for citizens.

The Commission recently proposed<sup>6</sup> the strategic use a wide range of specific and generic financial schemes to promote the cultural and creative sectors for the generation of growth and jobs in the EU. Possible tools include Horizon 2020, the 80 billion euro research and innovation funding programme proposed by the Commission for the period 2014-2020.

It has been estimated that some 70 percent of all technical innovations hinge directly or indirectly on the properties of the materials they use and this percentage is expected to increase during the decades 1970-2030<sup>7,8</sup>. Material research plays an important role in the creative industries because the key of the success of a new product is increasingly linked to the materials used. In the context of strengthening the EU's global position in innovation and technology and respond to the economic crisis, it is necessary to add value to products and processes via new functionalities, embedded service and sustainability.

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<sup>1</sup> Commission Green Paper "Unlocking the potential of cultural and creative industries" (April 2010), [http://ec.europa.eu/culture/our-policy-development/doc/GreenPaper\\_creative\\_industries\\_en.pdf](http://ec.europa.eu/culture/our-policy-development/doc/GreenPaper_creative_industries_en.pdf)

<sup>2</sup> European Competitiveness Report 2010, <http://bookshop.europa.eu/en/european-competitiveness-report-2010-pbNBAK10001>

<sup>3</sup> Building a Digital Economy: The Importance of Saving Jobs in the EU's Creative Industries, March 2010. TERA Consultants.

<sup>4</sup> [http://www.unctad.org/en/docs/ditctab20103\\_en.pdf](http://www.unctad.org/en/docs/ditctab20103_en.pdf)

<sup>5</sup> [http://www.consilium.europa.eu/uedocs/cms\\_Data/docs/pressdata/en/intm/114637.pdf](http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/intm/114637.pdf)

<sup>6</sup> <http://ec.europa.eu/culture/our-policy-development/documents/communication-sept2012.pdf>

<sup>7</sup> Die Hightech-Strategie für Deutschland – Erster Fortschrittsbericht (2007), Bundesministerium für Bildung und Forschung (Hrsg.), [http://www.bmbf.de/pub/hts\\_fortschrittsbericht.pdf](http://www.bmbf.de/pub/hts_fortschrittsbericht.pdf)

<sup>8</sup> [http://ec.europa.eu/research/industrial\\_technologies/pdf/technology-market-perspective\\_en.pdf](http://ec.europa.eu/research/industrial_technologies/pdf/technology-market-perspective_en.pdf) (2012)

Recognising the competitive advantage that creativity and cultural inputs bring to European industries, a workshop on new materials for the creative industries was organised in 2010<sup>9</sup> and calls for collaborative research for proposals have been published in 2011 and 2012. A total of 6 projects have consequently been funded. These projects include research, innovation and networking and are based on upstream collaboration between product designers, material scientists and engineers to identify both the market pull and the creative potential of new materials and technologically advanced systems.

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<sup>9</sup>[http://ec.europa.eu/research/industrial\\_technologies/pdf/creative-industry-workshop-report\\_en.pdf](http://ec.europa.eu/research/industrial_technologies/pdf/creative-industry-workshop-report_en.pdf)

## **Bridging the gap between material innovation and the creative communities: a new consultation**

In the 2010 workshop "New materials for the creative industries", the objective was to identify possible priorities in the field of research in materials for the creative industry with realistic potential for industrial development and to gather ideas on how to progress on the successful design of materials with improved performance. A pivotal question emerged: how can we foster synergies and collaborations between material scientists and engineers and the creative industries for the generation of growth and jobs in the EU?

To answer this question, a new round table meeting has been organised by the European Commission (DG Research and Innovation, Unit Materials) on October 5<sup>th</sup> 2012 in Brussels. The aim of the meeting was to hold an open discussion on the following specific points:

1. Can we identify "creative industries" that benefit from innovation materials?
2. Are there needs for materials research and innovation in common across different sectors?
3. How can we bring support to these needs via European Research and Innovation funding schemes?

In line with the definition of creative industries given in the Green Paper<sup>1</sup>, representatives of creative industries linked to the European materials and manufacturing industries have been invited, e.g. architecture, art, crafts, supports for cultural items, decoration, fashion, furniture, lighting, interior design materials and products, jewels, luxury, media supports, publishing, sport and toys, amongst others, but not including e.g. advertising, films, music, performing arts, television, radio and videogames.

The meeting was opened by Renzo Tomellini (Head of Unit Materials, DG Research and Innovation), followed by Dorota Nigge (Unit Culture policy, diversity and intercultural dialogue, DG Culture and Education). The keynote speech was given by Eva Olde Monnikhof (European Creative Industries Alliance) that illustrated the scope and current activities of the European policy platform and started the round table discussion on the above points.

In total, 21 experts participated to the discussion and 3 sent their contributions in writing. This final report has been subscribed by all. A full list of participants and agenda can be found in the Annexes.



# Round table discussion and recommendations

## *1. Can we identify "creative industries" that benefit from innovation in materials?*

The participants agree that virtually all industries can benefit from creativity and innovation in materials. A creative approach in conceiving, developing, producing, using and recycling materials can be effective in strengthening the competitiveness and success of all European industries, particularly of industries where technological advances are exploited in a creative way to increase the perceived value of a product or service (e.g. architecture, art, crafts, supports for cultural items, decoration, fashion, furniture, lighting, interior design materials and products, jewels, luxury, media supports, publishing, sport and toys).

There are several working definitions of creative industries and how these may be distinguished from the cultural industries. For the purpose of this discussion, the participants agreed to use the Green paper definition<sup>1</sup>, but focused on tangible products and materials. All industries may be considered where the outcome of creativity is a product that can be manufactured, both mass-produced or as niche product.

A closer collaboration between the creative industries and the material community has been called for and the following benefits have been highlighted:

- generation of creative solutions and new functionalities in a non-traditional way thus adding value to existing European products and allowing the development of completely new (and often unforeseen) products with strong competitive advantages;
- boosted communication along the value chain for new product development and increased potential for innovations in materials by reducing the gaps between the material developers, the designers and creative communities and the producers of products and services;
- new business models where design is integrated in the value chain and all actors capable of adding value to products and processes are considered upstream in material development.

## *2. Are there needs for materials research and innovation in common across different sectors?*

The participants agree that there are common needs for materials research and innovation across different creative sectors, notably a stronger support for research and a framework for more effective and more upstream collaboration.

Various points mentioned during the round table were of relevance, especially the following:

- There is a need for creativity-driven (e.g. design-driven) innovation.
- To achieve this, it is crucial to bring people from different creative and technological backgrounds together on equal footing and to find a common language.
- When new materials, products and production processes are conceived together, the industrial take-up time as well as time to market is minimised.
- Products are here intended as product + services realities.

- It is necessary to add functionalities to materials in order to increase the added value of the products+services. This will enhance the competitiveness and also make it more difficult to copy a product. Among the possible functionalities: practical properties (antibacterial, anti-slipping, anticorrosion, waterproof,...), emotional effects (enhanced sensations), reactivity, smart energy management.
- Values are also transmitted by materials. The choice and use of materials communicate a message and contribute in shaping the image of a person, company and brand. For instance, using waste or process by-products to produce new materials and products or adopting bio-mimetic approaches.
- Facilitating the transfer of materials across sectors and creative solutions for combinations of materials and multi-material products would enhance innovation. Technological or creative solutions to sustainability of materials and to the manufacturing problems that this transfer may bring need to be optimised.
- Life cycles of products stemming from the creative industries are often shorter. This fast changing pace requires dynamism and accelerated innovation, including a new approach to standardisation of Product Category Rules (PCR).
- Intellectual property needs should be considered, depending on how close to the market are the players. The lack of knowledge on how to protect (or not protect) intellectual property in a fast changing world (especially in SMEs) should be properly addressed.
- New business models should be investigated and developed.
- There is a need for more dissemination of research results. Results should be gathered and communicated in final user-oriented arenas, like fairs, exhibitions, conferences and other business events (or even retail environments), not only in scientific publications.
- Increase access to unused knowledge, by increasing communication between actors along the value chain, and facilitate access to finance. Intellectual propriety protection may be an issue, and the problem may be overcome by new ways to capitalising on knowledge (shorter life cycles, valorisation days, open doors events, fairs).
- There is a need for more incubators and fab labs<sup>10</sup> to ensure a relevant transfer of technology integrated from materials in laboratories to industries. It is necessary to have more manufacturing start-ups and flexible established industries, and reduce the new production lines bottle-necks.
- Deal with the challenges of different production needs: effective management of up scaling production of creative new materials versus making small batches. Proof of concept or demonstrators are needed. Once again, the role of trade fairs has been emphasised.
- Promote sustainable and responsible approaches to reduce consumption and the principle of circular economy of material.

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<sup>10</sup> Wikipedia: "A fab lab (fabrication laboratory) is a small-scale workshop offering (personal) digital fabrication"

- Recognising the unique richness of the European cultural, industrial, artistic, humanistic, and financial ecosystem, the participants highlighted the potential that Europe has to be a winner in international contexts (“things must happen in Europe”).

### 3. How can we bring support to these needs via European Research and Innovation funding schemes?

Participants expressed appreciation for the attention given to the creative industries by the European Commission (DG RTD, DG EAC, DG ENTR) and by the European Parliament (STOA). The recent calls for proposals and the projects financed under the 7<sup>th</sup> Framework Programme for Research and Innovation under “Materials” have been commented in positive terms. The participants called for a continuation and reinforcement of such support.

Various recommendations have been proposed:

- Integrate design and technological research and innovation. Support creativity-driven (e.g. design-driven) new products+ services.
- Develop and promote platforms that support material development and innovation, involving designers, scientists, end-users but also societal stakeholders, anthropologists etc. and allow capturing and, when possible, making available unused knowledge and existing functional materials transfer (low hanging fruits).
- The idea of a material database at the EU level was mentioned.
- Final user-oriented model should be adopted and cross sectorial use of materials fully exploited.
- Financial support:
  - Collaborative projects with a stronger focus on creative methodology and innovation culture. The collaboration between creative and material community should be on equal grounds and can be directed also to find solutions for infrastructural challenges and real problems for society (not only high end products). Wide involvement of suppliers, designers, researchers should be fostered.
  - Promote targeted actions that support Small and Medium-size Enterprises (SME) that are interested in exploiting and develop project to market, support in IPR issues and in sharing RTD costs to solve big common problems.
  - Both top-down and bottom-up manufacturing approaches should be considered.
  - Develop mechanisms that ensure dissemination of results after research projects and develop more effective measures for communication and exploitation plans. A stronger involvement of the European Commission in promoting and showcasing European research was called for.

- Support organisation of and participation in fairs, exhibitions, conferences, brokerage and “speed dating” events across sectors (architecture, textile, leather, furniture, design, production, etc..), awareness events, skyboxes and other effective venues of dissemination, where materials scientists can meet user and market-inspired ideas and creativity and vice versa.
- Use structural funds to mainstream creativity in technological development, in the areas concerned.
- Implementation of accompanying measures and tools, such as:
  - Support clusters and fostering complementary networks. For example, funding schemes for clustering along the value chain.
  - Inducement prizes to form alliances between product designers and material developers, targeting young people as a priority.
  - Dedicated measures to support the industrialisation of the more promising solutions, including IPR protection and exploitation.
  - New materials and novel solutions should be integrated into innovative systems. Prototyping and pilot lines should be supported.
  - Special attention to SMEs, which represent the large majority of European creative enterprises. Vouchers for SMEs have been mentioned, but not considered sufficient per se.
  - Measures to facilitate access to finance in this field.
  - Measures to mobilise knowledge and to promote the use of the designer as “broker”, the facilitator of interface process between technology development and production.
  - Training and development of creative skills. Multidisciplinary education in both materials and product design.
  - The European Advanced Materials Technology Platform EuMaT and PROsumer.NET, a cross-platform initiative of ETP’s in the field of design-based consumer goods, will explore the appropriateness of launching a permanent expert roundtable on materials for the creative industries open to all stakeholders and concerned actors.

## Conclusions

In a globalised and fast changing world, all industries can profit from boosting creativity and innovation in materials. Economic success and societal benefits can be expected by bringing the creative and the material communities closer together. The creation of such novel innovative ecosystems will have positive spill-over effects on the competitiveness of European industry and generate jobs and economic growth.

The participants of the round table discussion called for a continuation and reinforcement of material research and innovation support. There should be an increased presence of materials suppliers, manufacturers and final users of the resulting products in technological research and innovation projects. European support should address all bottlenecks found in creating new, better performing and sustainable products, among which: knowledge gaps, IPR issues, access to finance, regulations, and standards.

Creativity-driven innovation benefits from richer human and professional skills. Projects and prizes, as well as dedicated events, have been identified as instruments that can spread awareness, stimulate new ideas and the conception of new products, connect players along the value chain, and speed up access to market.

## **Annex I. List of experts endorsing this report and addressing it to the European Commission.**

<b>Organisation</b>	<b>Name</b>
European Creative Industries Alliance	Eva Olde Monnikhof
EuMaT and Alliance 4 Materials	Marco Falzetti
Districts of Creativity	Carlo Vuijsteke
Euratex	Lutz Walter
COTANCE	Gustavo Gonzalez-Quijano Vazquez
International Fur Trade Federation.	Mette Lykke Nielsen
European Ceramic Industry Association	Astrid Volckaert
Architects' Council of Europe	Sara van Rompaey
Philips	Simone Stavenuiter
PoloTexSport	Piero Sandroni
Bartlett School UCL	Steve Bunting
Cumulus	Virginia Tassinari
German Design Council	Lutz Dietzold
Ceramic Technology Institute	Adriana Belda
DanishDesigners	Steinar Valade-Amland
Creativ wirtschaft	Melina Schneider
Material Innovation Institute	Giuseppe Visimberga
Material Vision Frankfurt Messe	Anja Diete
Materials ConneXion	Christian Tubito
MateriO	Karen Sprengers
Material and design Exchange	Stuart Preston
University of Antwerp	Filip De Weert
Innovawood	Gus Verhaeghe

## **Annex II. Agenda of the round table discussion.**

### **Materials Research and Innovation in the Creative Industries**

*Brussels 5 October 2012*

10:00 Welcome and registration

10:30 Introduction -- Renzo Tomellini (Head of Unit Materials)

11:00 Keynote speech –Eva Olde Monnikhof (European Creative Industries Alliance)

11:30 Introduction and discussion: Can we identify “creative industries” that benefit from innovation in materials?"

12:30 Lunch

13:30 Round table discussion: Are there needs for materials research and innovation in common across different sectors?

14:15 Round table discussion: How can we support these needs via European Research and Innovation funding schemes?

15:00 Concluding remarks

15:30 End of meeting

### **Annex III. List of participants to the round table discussion.**

<b>Organisation</b>	<b>Name</b>
European Creative Industries Alliance	Eva Olde Monnikhof
EuMaT and Alliance 4 Materials	Marco Falzetti
Districts of Creativity	Carlo Vuijsteke
Euratex	Lutz Walter
COTANCE	Gustavo Gonzalez-Quijano Vazquez
International Fur Trade Federation	Mette Lykke Nielsen
European Ceramic Industry Association	Astrid Volckaert
Architects' Council of Europe	Sara van Rompaey
Philips	Simone Stavenuiter
Bartlett School UCL	Steve Bunting
Cumulus	Virginia Tassinari
German Design Council	Lutz Dietzold
Ceramic Technology Institute	Adriana Belda
DanishDesigners	Steinar Valade-Amland
Creativ wirtschaft	Melina Schneider
Material Vision Frankfurt Messe	Anja Diete
Materials ConneXion	Christian Tubito
MateriO	Karen Sprengers
Material and design Exchange	Stuart Preston
University of Antwerp	Filip De Weert
Innovawood	Gus Verhaeghe
European Parliament (STOA)	Peter Ide-Kostic
European Parliament (STOA)	Nadezda Zivenko
European Economic and Social Committee	Eleonora Di Nicolantonio
European Commission	Dorota Nigge
European Commission	Renzo Tomellini
European Commission	Lula Rosso



European Commission

**EUR 25605 — Materials research and innovation in the creative industries**  
**Report on the round table discussion, Brussels, 5 October 2012**

Luxembourg: Publications Office of the European Union

2012 — 15 pp. — 21 x 29.7 cm

ISBN 978-92-79-27538-8

doi 10.2777/30054

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In a globalised and fast changing world, all industries can profit from boosting creativity and innovation in materials. Economic success and societal benefits can be expected by bringing the creative and the material communities closer together. The creation of such novel innovative ecosystems will have positive spill-over effects on the competitiveness of European industry and generate jobs and economic growth.

The participants of the round table discussion called for a continuation and reinforcement of material research and innovation support. There should be an increased presence of materials suppliers, manufacturers and final users of the resulting products in technological research and innovation projects. European support should address all bottlenecks found in creating new, better performing and sustainable products, among which: knowledge gaps, IPR issues, access to finance, regulations, and standards.

Creativity-driven innovation benefits from richer human and professional skills. Projects and prizes, as well as dedicated events, have been identified as instruments that can spread awareness, stimulate new ideas and the conception of new products, connect players along the value chain, and speed up access to market.

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ISBN 978-92-79-27538-8



doi:10.2777/30054