

EUROPEAN CONCEPT ROAD MAP

1 Introduction

In the direction of fostering of the overall performance of European products across their entire life-cycle, “European Concept” is an initiative that aims at the identification of market segments and needs for products and services continuous innovation in today globalize markets. It aims to create a Road Map on a European Brand for new products/services enabling industries to satisfy user’s expectations and to value creation. This paper will introduce to the European Road Map initiative, focusing on:

- the methodology to design innovative value propositions for new HVA products/services;
- the governance for the initiative among stakeholders
- the four Topics of the strategy for R&D within European FP7 programmes and the ManuFuture Initiative.

The European Concept Road Map is based on the following premises and assumptions:

- Product innovation is intended to be a different way of providing answers to identified users’ needs. Specifically:
 - Different solutions (i.e.: contact lenses versus reading glasses)
 - Different delivering modalities: no longer a physical good but a service of which the product is an instrumental part (i.e.: the printing and the copying service delivered to our office by locating a physical copy machine managed by the external printing company. We pay the individual copies. Yearly kilometers delivered with different transportation vehicles such as big cars, city cars, moto-vehicles, campers, etc.) instead of one owned car only.
 - Different integration: no longer a physical good only but a set of integrated services (i.e.: heating and air conditioning systems with installing and maintenance services). Long chains of integrated services (i.e.: internet booking, air flight, car rental, hotel accommodations, etc.), each of them including several tangible physical goods.

- Product innovation is a mandatory task for the European system since is the only way to face competition from emerging countries.
- Product innovation is the sole answer to the market polarization (hi-end and low-end segments only, no middle-end segments).
- The users' needs approach is the only proper and indicated one to guarantee:
 - o The total satisfaction of the final customer / consumer.
 - o The creation of innovative and articulated value propositions that integrate advanced services and tangible goods.
- Real product innovation, and consequently sustainable competitive advantage, is achievable only by integrating, in the design decision process, suppliers and customers.

The old market approach was based on decisions made on the collective behavior analysis. As experts know, such behaviors were, and still are, a consequence of explicit and well aware needs. Unexpressed needs, as well as apparently not directly connected needs, do not appear in collective behaviors. The only way to detect those needs is obtained through an individual behavior analysis. Innovative value propositions, conceived as answers to unexpected and not directly correlated needs, are the direct consequence of these type of individual analysis. Only by focusing on the goal of extending the chain of users' needs, it is possible to elaborate articulated and innovative value propositions.

The concept of “long chains of needs” is the driving factor of the European Concept Road Map.

The primary consequence of such approach is the integration in the design process of new value propositions of the supply and delivery chain, since most of the final deliverables are services and goods provided directly by these stakeholders. The manufacturer, nowadays, is no longer the sole interpreter of the market's needs and all the other players working for him are merely operational executors of his wishes. The old model does not produce innovation and gradually leads companies “out of the game”. Integration and collaborative approach are the correct answer to the “new game”.

Another consequence of this new winning users' needs oriented approach is customization. Satisfaction is accomplishable not only through articulated and innovative value propositions but, in most cases, with “made-on-order” type of offers. Since this aspect is merely a matter of perceived quality, a company, in order to be competitive must structure its production on sets of given quality deliverables accomplishable only with a deep level of knowledge of the users' needs.

2 Objectives

In designing the European Concept Road Map we have accomplished the following 3 (three) objectives strategic for the competitiveness of the European Industrial System.

A. New value propositions designed on users' needs

Create a system to support the companies to design new value propositions using a new totally innovative approach based on the users' needs.

The accomplishment of this objective will be obtained by :

Creating a specific design process using a very rigorous methodology supporting companies step-by-step in accomplishing the required tasks. One of the main characteristics of the methodology will be a user validation system to be activated at the end of each design decision phase.

The overall goal of the design process methodology is to postpone the old design precondition elements: “what we have done in the past, what we have and what we know how to do”, from the beginning to the end of the process as aspects to be evaluated for determining the general value proposition sustainability. Only the needs of the final user will be the driving elements on which new value proposition design will be based.

B. Collaborative approach

Create Systems to support the companies in designing new value propositions no longer on an individual base, but in network with other stakeholders with which to share the competitive product innovation effort. In addition create Systems to allow companies to share and acquire information and experiences, among each other, and in particular with final users of their value propositions deliveries.

The accomplishment of this objective will be obtained by focusing on the following:

- Communities forums for sharing, exchanging and acquiring information with/from other companies and final users
- Collaborative management Systems for decision making on new value proposition design.

C. Users' needs classification system of knowledge world

Create Systems to support the industries to interface with the “knowledge world” in a new and innovative way: by using the users'

needs to be satisfied as the selecting criteria for knowledge identification.

The accomplishment of these objectives will be obtained by creating :

- Data bases structured in areas where information will be stored with a classification system based on final users' needs.
- Pre-selected sites where to find specific identified information.

In summary, the *objectives* (as well as *expected results*) of The Road Map are:

- 1) **to identify models and a methodologies of innovation** based on users' needs, value propositions, infrastructures to provide new value propositions, and the relationships among such entities;
- 2) **to identify sustainable models** with the aim of define concrete innovative elements and actions that influence the Novel Circuit for Global Production and Manufacturing that respond to the broad drivers of change (nature, economy, society and technologies as reported in all ETPs SRA);
- 3) **to develop intelligent knowledge-based Systems** relying on the model of innovation and supporting the innovation processes;
- 4) **to identify and elaborate specific sources of qualitative and quantitative information** for the creation of specific data bases to be used by collaborative networks of enterprises in the creation of innovative value propositions;
- 5) **to identify models to integrate existing sources of information** about innovation projects, technologies, techniques, materials, and create *ad-hoc* dynamic virtual communities focused around delivering specific high-value propositions;
- 6) **to identify management Systems of collaborative networks** to share useful information to be classified and stored in dedicated data bases to be used to produce new innovative value propositions.
- 7) **Develop Systems of promotion within the European business community** of the new European Concept methodology, for its adoption.

3 Product Innovation Approach

European Concept aims at innovative customer-driven value propositions for the globalize product/services performances. Value propositions are key components of the products/service consumption

and production concurring to market success, addressing perceived values, total quality, implementation design. They represent the new competitive advantage essential for the development of new products/services.

The objective of the European Concept initiative is to allow industries to go beyond selling propositions that operates on the tangible products in view of a Brand European products/services marketed in the global markets.

This transectorial objective can be related to the ManuFuture perspective for a “new understanding of the function of products and services” facilitating “the industrial adoption of new business models” (“New Added-value products and product/services”, Strategic Research Agenda of the ManuFuture Platform 2006).

European Concept Road Map in medium term aims to pro-actively contribute to collectively define an emerging R&D area dedicated to modify the present product innovation approach in products/services and to promote an industrial driven action and international cooperation.

The present Product innovation approach is focused on:

- Changing and modifying some product features by using creativity
- Competitors mainly
- Market collective behaviors / observation exclusively

The new Product Innovation approach focus on Value propositions:

- user needs (explicit, non explicit, indirectly connected)
- new technologies and innovative services for identifying new modalities to satisfy users expectations
- individual behavior / observation.

New Value propositions -targeting users’ needs through perceived value- need to be:

- Innovative
- Highly technological
- Integrated (foster innovative services + tangible goods + intangible features)
- Multipurpose.

Therefore, the essence of “European Concept Road Map” is strengthening the culture of detecting and analyzing the users’ needs along the entire life-cycle of products, so that European industry can take advantage from the new opportunities in the global market.

In particular, the short term product new approach, supports the placement of today’s products (or part of them) in new markets (Figure 1).

- by disassembling existing products (a , b , c)
- by adding value to each component (a++ , b++ , c++)
- by delivering new integrations (a++) (b++ , c++) etc.

The short term objective of the initiative implies:

- Market segments' needs identification and
- Technology state of the art.

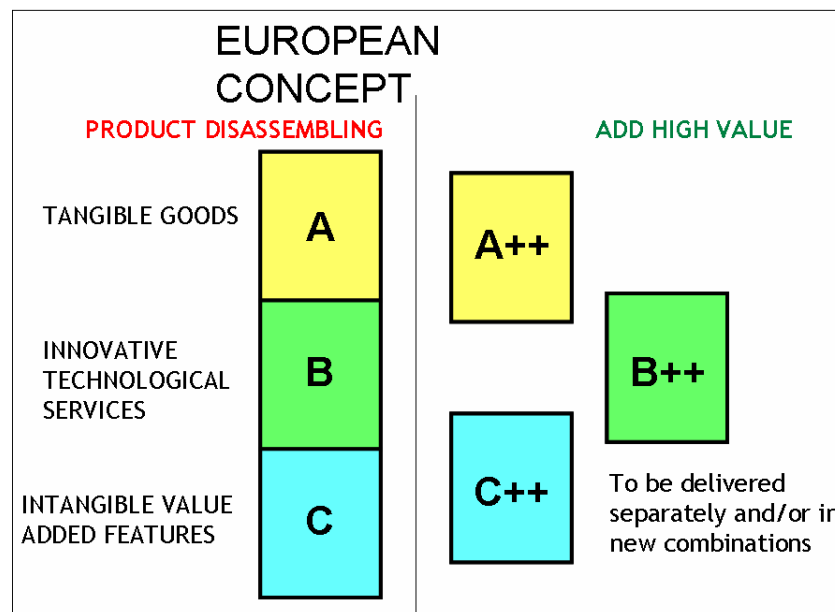


Figure 1: Product approach.

Summing up, integrated value proposition will foster a new business environment for innovative services including the product, as a tangible good, and will enable to meet and satisfy the user expectations and needs.

4 European Concept Initiative

The “European concept” initiative has the high level objective of enable a response along the product value chain of relevant European sectors. The mission is the collective creation of the “European Brand” for new products/services and the definition of research objectives to support the innovation of the product/service life cycle.

The business scope aims to boost product/service innovation in product industries, leveraged through the creation of integrated value propositions along the product life cycle that:

- satisfy articulated and complex users needs
- are sustainable (environmental, social, economical)
- are conceived to acquire new markets
- are delivered separately and/or in new combination.

The short term response aims to integrate actual goods with services and intangible features able to satisfy complex needs (Figure 2). To this end, the initiative supports:

- in short term, the modeling of the representation of consumers oriented market segments' needs for the design of innovative

value propositions. This description includes the new enablers such as rules, sustainability issues, knowledge management, networking, education, benchmarking, communication

- in long term, the creation of a ICT platform integrated system to connect the needs expressed by the different world market segments and the design of competitive, technological issue with sustainability and regulatory drivers;

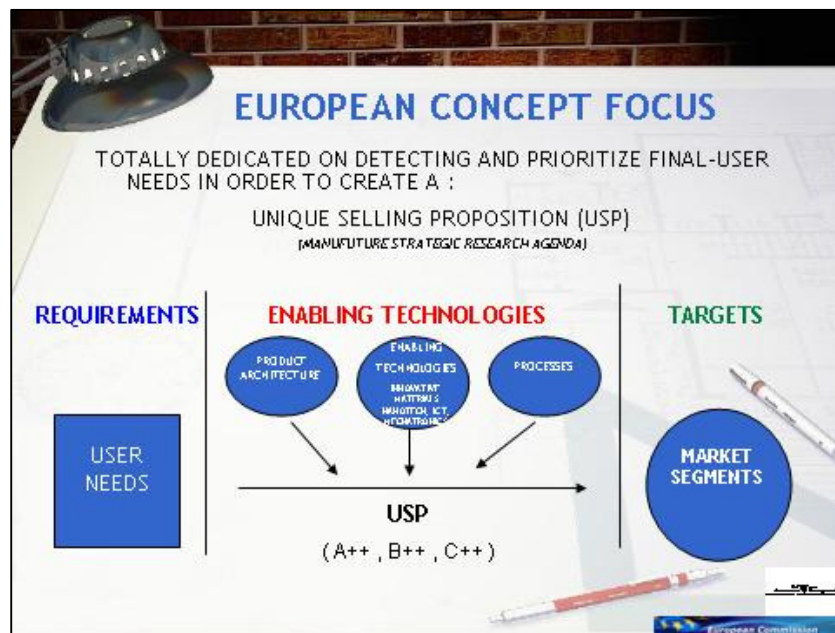


Figure 2: The Value Proposition response.

5 The European Concept Strategy

To support successful product/service industries to change the product innovation approach, collaborative R&D efforts should concentrate on four Topics:

Topic N.1:

“PRODUCTS/SERVICES INTELLIGENCE” (ACQUISITION METHODS)

- ◆ Data Intelligence-ICT Tools
- ◆ Segment and Needs Identification
- ◆ Technologies Identification for product/services life cycle (customization, virtual reality, reverse engineering)
- ◆ Databases Definition: Market Segments / Needs / Perceived Qualities / Applications / Knowledge / Production-Distribution
 - ◆ Definition of all objects used in the model;
 - ◆ Definition of relations among objects;

- ◆ Definition of stakeholders and related access modalities;
- ◆ Passive sources of information
- ◆ Active source of information
- ◆ Collaborative network
- ◆ Definition of model inputs and outputs;
- ◆ Definition of physical space in which the system shall operate.

Topic N.2:

“PRODUCTS/SERVICES ADVANCED DESIGN”
(*DESIGN METHODS*)

- ◆ Q.F.D. Methodology (Perceived & Given Quality)
- ◆ Intangible Value Added Features (Sustainability & Brand)
- ◆ Strategies Development
- ◆ Collaborative Design
 - ◆ Community Forums: users/providers;
 - ◆ Definition of collaborative management decision making.
 - ◆ Definition of interface modalities with knowledge world environment;

Topic N.3:

“PRODUCT ADVANCED TECHNOLOGICAL SERVICES”
(*NEW SERVICES*)

- ◆ Advanced technological services (new sales methods)
- ◆ CAD Design and Prototyping and final user customization
- ◆ European Brand (Rules, Standard, Patterns, Rights)
- ◆ Design Software and Working Platforms for:
 - ◆ Segments analysis & development
 - ◆ Needs identification & enlargement
 - ◆ Features identification
 - ◆ Applications identification
 - ◆ Technology identification
 - ◆ Production – Distribution

Topic N.4:

“PRODUCTS/SERVICES BUSINESS MODELS”
(*REALIZATION METHODS*)

- ◆ Multi localized Enterprise
- ◆ System Integration Methods
- ◆ Globalize Governance Models (new sales and new services)
- ◆ Transition phases from Tangible Goods to Holistic Services: methods and tools

◆ Product/service networking and trading practices

Therefore, the European Concept Initiative can exchange ideas and receive contributions for its action plan from the Sustainable Consumption and Production Action.

6 Working Group Governance

European Concept Working Group has a simple organization with two boards and staff.

- 1- Steering committee (each representative representing ten industries with the tasks of:
 - decisions, integration and synthesis
 - final delivery of documents(road maps, priorities, time horizon, etc)
- 2- Support Clusters (larger participation) providing:
 - needs from industries
 - consultation and prioritization
 - market analysis
 - technologies & capabilities from industries

Staff has role of overall coordination and interface such as:

- Programme interface with Manufuture platform(High Level Group, Support Group, Mirror Group, Industrial Group)
- Product interface with other platforms, other working groups and other international entities
- Business interface with Sustainable & consumption action plan and working groups
- International programmes

The phases of the “European Concept” initiative are reported in Figure 3.

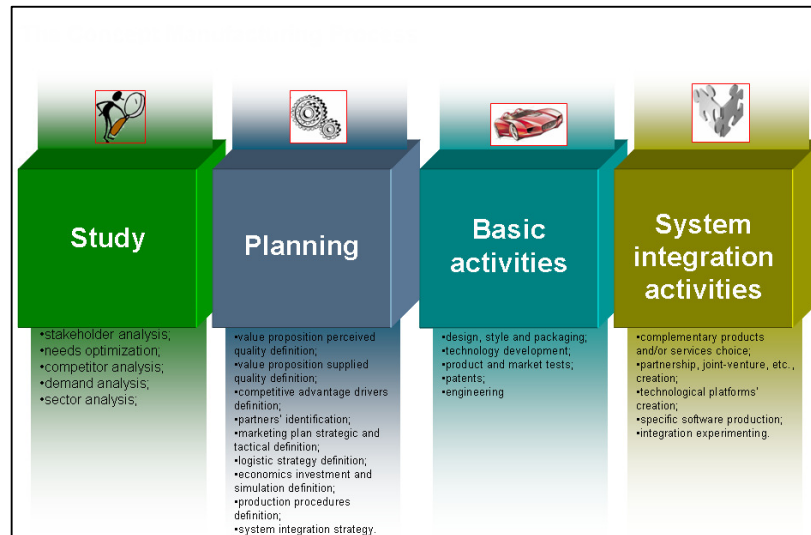


Figure 3: The European Concept phases

Regarding the first activity “Stakeholders’ analysis”, consultations have been carried on during:

- The first meeting of European Concept Working Group within Manufuture ETP , 2 October 2007, Brussels
- The meeting “Strategies for Global Manufacturing” - a European View of IMS, 15-16 November 2007, ETHZ, Zürich where, inside Topic 5: Networked Production, the “European Concept: the European Way to Product Innovation” was presented.
- The Manufuture Conference, 2-4 December 2007, Porto
- The Manufacturing in FP7 Conference., 16-17 January 2007, Cardiff. The Conference was organised by I*PROMS Network of Excellence and sponsored by the European Commission, Welsh Assembly Government and the Manufacturing Engineering Centre (MEC), Cardiff University, UK - Co-ordinator of I*PROMS NoE.

6.1 Connection with Manufuture

The European strategy for new added-value products and product/services developed by the ManuFuture technological platform in the Strategic Research Agenda (SRA) (European Commission ManuFuture Platform, 2006), published in 2006, states as follows:

- “Every product ...also requires a USP (Unique Selling Proposition) in order to avoid the need to compete on cost alone”
- “It is essential that European Companies be able to understand and satisfy the needs of customers”
- “The business focus will shift from simply designing and selling physical products to selling a system of products and

services “...The provision of Product/services...takes into account the whole life cycle...”

The above statements provide the elements that support the positioning of European Concept initiative within the Pillar 1 “New added-value products and product/services” of the goal “Make/Delivery of HVA Products/Services” (Jovane, F. and Paci, A.M. 2004).

Furthermore, ManuFuture promotes above all the life-cycle orientation approach for Competitiveness and Sustainability of European Manufacturing.

The ManuFuture High Level Strategy reflects the previous ManuFuture Vision 2020 statement that says: “Manufacturing is likely to become increasingly service-intensive. The service orientation and the increasing customer expectations have consequences for the competitive organisation of production, value-chain management and customer relationships, as well as the service elements themselves” (ManuFuture High Level Group, 2004).

Referring to the whole products/processes life-cycle, European Concept focus particularly those processes that act now on the tangible products in view of the industrial transformation towards the intangibles (products/services) to satisfy new consumers and societal needs. In this perspective, European Concept can provide a significant contribution to the European strategy for market and growth, carried on by the ManuFuture platform. This contribution - mainly addressing the Distribution, Maintenance and Recycling processes of the product - is described in Figure 4 and will be developed as in the time plan.

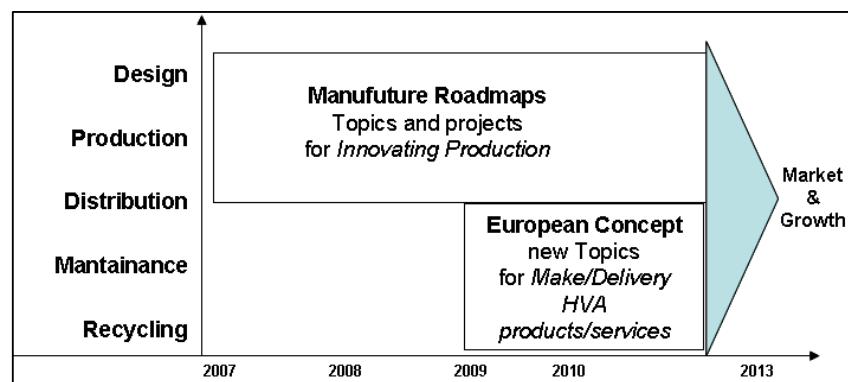


Figure 4: Product LC innovation time plan

In this way, European Concept can:

- pro-actively create the basis for the “new understanding of the function of products and services” facilitating “the industrial adoption of new business models”;

- contribute, through a consultation process, to develop the business ground for effective transfer of relevant knowledge results carried on for devising new industrial models into real processes - particularly at the Introduction stage of the Product Development;
- develop a “perceived values” response with priorities aware of the broad drivers of change (nature, economy, society and technologies).

New products and services will strongly require networked production and collaborative networks since the early phase incorporating:

- “user integration” and smart production networks of SMEs making use of appropriate technologies
- Information and communication channels.

In the end, European Concept can support a new emerging R&D area. Product/service intelligence.

7 Methodology

7.1 Market segments’ needs identification

The methodology offers the steps for identification for:

- Market segmentation
- Needs’ identification
- Needs weighting
- Stakeholder analysis
- Demand analysis
- Sector analysis

The activities are reported in Figure 5:

MARKET																									
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SEGMENT 1	SEGMENT 2 SEGMENT n																								
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Figure 5: Market segmentation.

7.2 Technology state of the art

In order to identify new applications for new value propositions, that satisfies new industrial needs, it is necessary to analyze, identify and study the life-cycle of different technologies (Figure 6).

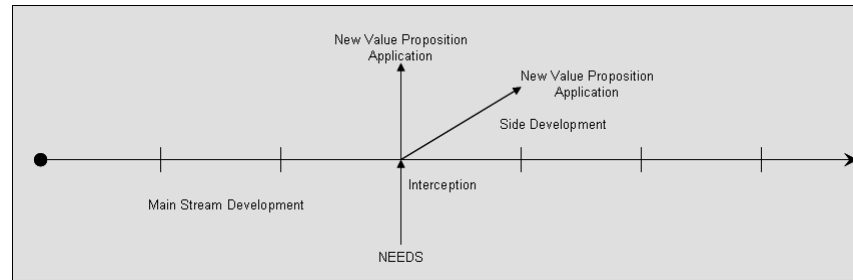


Figure 6: Technology life-cycle.

8 Overall Impact

The European industrial system should face the new opportunities offered by the globalization with new products development strategies. Primary aim of the "European Concept" methodology is to strongly support the industrial system in enlarging its vision.

In particular:

1. Taking into account the large emerging market segments of low-end buyers, that representing millions of new consumers.
2. Considering also new products as integrated value propositions made of innovative services and tangible goods both of them not necessary produced in Europe. European companies should concentrate their production activity and relevant investments on the macro value added production phases. The production design phase is certainly one of them.
3. Helping the European companies to re-positioning in the global market, in order to supply integrated value propositions, able to satisfy those articulated and complex consumers' macro-needs. In practice, supporting them abandoning the logic of production and sales of goods and services, and instead entering into the logic of production/integration of advanced services including high technological goods;
4. In such prospective high-tech goods must be intended as a tool of a broader mix of advanced integrated services;
5. Assisting the European firms to by-pass the reductive logic according to which knowledge is a tool for producing goods/services.
6. The knowledge, which several companies hold, can and must be intended to be a product itself. Such knowledge shall, therefore, be proposed and sold directly to the market;
7. Supporting those European firms that are no longer competitive, in respect to goods produced by emerging countries, in re-positioning on the global market by selling

its know-how and those technologies, developed through the years by integrating those assets in a collaborative mix conceived to add value to both seller and buyer;

8. Facilitating those European firms to learn opportunities offered by the global market, by participating to international relational contexts, where to learn needs proper of different segments;
9. Rendering the Research and European University System known to be fragmented and often separated from the needs of the users to be part of an integrated collaborative system linked with the needs of the market;
10. Making those European firms involved in the project to understand that they belong to a new and broader system, (in respect to the one they were convinced to belong to, because of their products, category, and dimensions of the market in which they operate) capable to satisfy new advance and complex needs;
11. As an example, a university does not consider a manufacturing company about to exit the market, (since not competitive with its products anymore), as a possible competitor, on a knowledge aspect that the firm has developed in years of operation.

9 Conclusions

The European industrial system should face the new opportunities offered by the globalization by developing new products development strategies. The "European Concept" approach aims to support the industrial system to focus on the change that support to turn its business vision into a market success. "European Concept" is the brand for innovative value propositions designed in Europe as advance technological answers to the world user's needs. In particular: taking into account the large emerging market segments of low-end buyers; considering new products as integrated value propositions made of innovative services and tangible goods both of them not necessary produced in Europe; helping the European companies to re-positioning in the global market, in order to supply integrated value propositions, able to satisfy those articulated and complex consumers' macro-needs.

Taking that "Apart from aesthetics, design can contribute significantly to utility value, and is often a decisive factor when choosing between different options. Although design is already a strongpoint of many European products, the EU needs to leverage its strengths in this area, since other countries are not lagging behind in technological innovation" [2]. The European Concept Working Group is part of the *ManuFuture* Technological Platform.

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