Creative Industries
Demand driven innovation*

Draft version (1.5.2014)

* This input was produced for the final report which is expected to be presented at the final ECIA conference in Amsterdam on 27-28 November 2014. If you have comments on this, please contact: Ms. Tuija Mannila, Tuija.Mannila@tampere.fi, tel. +358408016009

This initiative is supported by the European Commission’s Directorate-General for Enterprise and Industry and financed under the Competitiveness and Innovation Framework Programme (CIP) which aims to encourage the competitiveness of European Enterprises.
# Table of Contents

1 Introduction......................................................................................................................................................... 4
   1.1 Short background introduction....................................................................................................................... 4
   1.2 Demand driven innovations ............................................................................................................................. 5
   1.3 Demand driven innovation policy .................................................................................................................. 6
      1.3.1 Public procurement ................................................................................................................................. 8
      1.3.2 Regulation ............................................................................................................................................... 9
      1.3.3 Policies supporting private demand and systemic policies ................................................................. 9
2 Key Issues and Challenges .................................................................................................................................... 11
   2.1 Digitalization and international markets ....................................................................................................... 11
   2.2 Intellectual Property Rights .......................................................................................................................... 12
   2.3 Enlargening the marketplace by multi-disciplinary co-operation: new partnerships and business models.................................................................................................................................................................................. 14
3 Demand Driven Innovation Cases ........................................................................................................................ 15
   3.1 Pre-commercial procurement: Driving business innovation (Victoria, Australia) .......................................... 15
   3.2 “New Factory”(Finland) .................................................................................................................................... 17
   3.3 Telekom Innovation Laboratories (Germany) ............................................................................................... 19
   3.4 Design Factory, Media Factory, Service Factory (Aalto University Finland) ................................................... 20
   3.5 OpenLab: co-creation between disciplines (UCSC, Santa Cruz USA) ......................................................... 21
   3.6 Forschungscampus Connected Technologies (Germany) .............................................................................. 24
4 Preliminary Policy Recommendations .................................................................................................................. 25
   4.1 Use the opportunities of public procurements as a tool for boosting the CCI lead markets and to open new market opportunities for CCI’s ........................................................................................................... 25
   4.2 Build national and regional (cluster-based) co-creation platforms working in international networks .................................................................................................................................................................................. 25
   4.3 Promote the awareness and experiences to increase the demand for CCI’s ............................................... 26
   4.4 Favor CCI involvement in innovation funding ............................................................................................. 26
   4.5 Support and enhance the professionalism of user communities ................................................................ 26
1 Introduction

This is a brief summary on the key issues and challenges regarding cultural and creative industries (CCI’s) – and on how to boost them through demand driven policy actions. Additionally this draft gives preliminary policy recommendations on how to enhance the demand driven innovations in CCI’s. The policy recommendations are presented concerning the European, national as well as regional levels.

The background information, contents, framework and process of the project as well as the findings are explained in more detail in the full report of ECIA.

1.1 Short background introduction

The key question and success factor regarding demand driven CCI Innovation can be formulated as follows:

“To develop innovative markets for CCI companies and to show the value add of using services of CCIs in business contexts.”

All the advanced OECD economies have seen a major shift towards a knowledge-based economy where the changing consumer demand and behavior is one of the drivers. Consumer services are becoming more personalized and the consumer markets more diversified with an increasing collaboration between suppliers and consumers. (Nesta, 2010)

The cultural and creative sectors are facing a rapidly changing environment driven by the digital shift and globalization, leading to the emergence of new players, the coexistence of very big structures with micro-entities, a progressive transformation of value chains and evolving consumer behavior and expectations. While these changes offer great opportunities in terms of lower production costs or new distribution channels, they call for action at different levels.

These sectors are also characterized by a high fragmentation along national and linguistic lines. While the resulting cultural diversity is a clear European asset, this leads to limited and sub-optimal transnational circulation of cultural and creative works and operators within and outside the EU, geographical imbalances and - subsequently - a limited choice for consumers. (European Comission 2012)
1.2 Demand driven innovations

The term ‘demand’ is used here to refer to what businesses often call ‘consumer voice’: consumer wants, needs and preferences for goods and services. Demand refers to the desire or preference to purchase an affordable product or service (as opposed to unconstrained preferences or desires). Preferences may be obvious or hidden; demand can be private or public, and can come from consumers, other businesses or government. Government demand to business can be either for its own use, or for collective consumption through public services such as education and healthcare.

Largely driven by the unknown possibilities of technology, the role of the user in innovation processes has moved beyond market research. Many organisations now work directly with users not only to test prototypes, but also to exploit the users’ own ideas for improvements. Recent work in the UK has also highlighted the growing importance of user-led innovations. The Internet has facilitated communities of users to work together to design and develop new products and services, and modify existing ones.

Demand from users can influence innovation through three main mechanisms:

- Market-mediated – through consumer and business markets, which rewards innovative activities by firms.
- Co-ordinated – and expressed through the political (governmental) or non-profit arenas.
- Directly – through user modification and engagement – a growing trend that has been described as ‘democratic innovation’ or user-led innovation.

The role of demand in innovation is likely to differ depending on whether the relationship between or the proximity between the consumer and producer. Demand can influence innovation through several routes:

- Providing a market to sell goods (incentives).
- Traditional market research information and testing, in particular ‘average’ users’ reactions to specific goods and services.
- Traditional market research information on user preferences in general (including data on current preferences from trends in sales) and potential preferences.
- Users and producers engaging with each other throughout the innovation process.
- Early-adopter users providing information to others who later adopt the product, thereby actively creating markets for new products or services.
1.3 Demand driven innovation policy

One often used definition for the term demand driven innovation policy is “a set of public measures to increase the demand for innovations, to improve the conditions for the uptake of innovations or to improve the articulation of demand in order to spur innovations and allow their diffusion (Edler, 2007)”. In general, demand-side innovation policies aim at addressing barriers affecting the market introduction of innovations (responsive demand) and at the ability to define and signal new functional needs to producers (triggering demand).

Demand- and user-driven innovation policy includes new perspectives, activities and target groups that supplement and broaden the current innovation policy in a significant manner. Demand orientation places a particular emphasis on the macro perspective, i.e. promoting the innovativeness of markets, while taking advantage of, and steering market demand in a way that encourages innovation. The aim is to improve market conditions so that the introduction and diffusion of innovations is as efficient as possible.

On the other hand, innovation policy with a focus on user-orientation emphasizes the micro-perspective and services that are based on user needs, on user and user community participation in development work, and on taking greater advantage of user’s own innovation.

Efficiency of demand- and user-driven innovation policies requires aligned interventions on the European, national and regional/local level. Each of these levels plays different roles to piece together the puzzle of an integrated policy approach to promote demand- und user-driven innovation with a “Perfect Programme”.

Regional policy makers have the advantage of being close to the actors of their regional innovation system. This is especially beneficial with regard to user-driven innovation. Innovative co-development of users and producers requires regular interaction of user and producer which leads to the need of at least temporary co-presence. Regional and local policies can provide the necessary environment for such co-development. In contrast, the possibilities of creating new markets through demand-driven innovation policy instruments applied on the regional level are rather limited.

The role of national policies is rather to support regional user-driven policy instruments by creating a favourable regulatory framework. Barriers for an effective regional policy implementation which occur across many regions should be tackled at this level. National governments can also supplement regional or local funding of user-driven innovation programmes. As a second pillar, demand-driven innovation policies
are usually tied to national policy interventions. The introduction of new standards or regulatory frameworks which may create new markets is usually within the responsibility of national legislation. Aligned demand driven innovation policies on the national level can be used as leverage for user-driven innovation policies on the regional level.

In general, the policy tools for promoting demand- and user-driven innovation on the European level are of a similar type as on the national level. In addition, the aspect of transnational cooperation and support of diffusion of user-driven innovations may assist the scaling-up of commercial activities resulting of regional and local policy interventions (figure below).

The **objective of demand-driven innovation policy** is to **create new markets for innovations** and **stimulate for novel goods and services**. This is pursued by facilitating the market entry of new products and services, and by steering public and private demand towards innovative products and services by means of public procurement, regulation and taxation. (Finland’s Ministry of Employment and the Economy, 2010)

Furthermore, **demand driven policy** can be divided into **4 areas** (figure below):

1. competence development,
2. regulatory development,
3. development of public sector operating models and
4. Incentives for innovation.

Each of the 4 areas are further divided into sub-areas:


Edler and Georghiou (2007) proposed to classify demand-side policy instruments in four categories: public procurement, regulation, policies supporting private demand and systemic policies.

1.3.1 Public procurement

Public procurement of innovative goods and services relies on inducing innovation by specifying levels of performance or functionality that are not achievable with ‘off-the-shelf’ solutions and hence require an innovation to meet the demand. (Izsak & Edler 2011.)

Directing public demands towards innovation takes concrete shape in the form of public procurement. In the European Union, public procurement accounts 16 per cent of GDP. These large procurement volumes provide the public sector with a significant opportunity to have direct influence on demand for innovations through its own activities.
Citizens as consumers are expecting government to provide more tailored and personalized public services. Using public procurement to increase innovation allows government to act as a demanding consumer. Government can purchase innovations either on its own or in conjunction with private consumers, thus stimulating innovation. But such public procurement is not without its pitfalls and needs to be used in conjunction with other measures to stimulate private demand.

1.3.2 Regulation

Use of regulation for innovation purposes is when governments collaborate broadly with industry and non-governmental organisations to formulate a new regulation that is formed to encourage a certain innovative behavior. This type of activity is very efficient but often claimed to work on benefit of bigger and existing companies.

Intellectual property (IP) is any creative work or invention considered to be the property of its creator. Often, intellectual property rights are recognized and protected under the corresponding fields of law. Under intellectual property law, owners are granted certain exclusive rights, such as the ability to publish to various markets, license the manufacture and distribution of inventions, and sue in case of unlawful or deceptive copying. Common types of intellectual property rights include copyrights, trademarks, patents, industrial design rights, and trade secrets.

Standardisation is a voluntary cooperation among industry, consumers, public authorities and other interested parties for the development of technical specifications based on consensus and can be an important enabler of innovation.

1.3.3 Policies supporting private demand and systemic policies

1.3.3.1 Tax incentives
Tax incentives can increase the demand for novelties and innovation by offering reductions on specific purchases. Deduction, exclusion, or exemption from a tax liability, offered as an enticement to engage in a specified activity (such as investment in capital goods) for a certain period.
1.3.3.2 Catalytic procurement
Catalytic procurement involves the combination of private demand measures with public procurement where the needs of private buyers are systemically ascertained. The government acts here as ‘ice-breaker’ in order to mobilise private demand.

We can speak of catalytic public procurement when a state or public sector actor is involved in the procurement, or even initiates it, but the purchased innovations are in the last instance used exclusively by private end-users. The crucial feature of catalytic procurement is that the state or public sector plays a key role as the initial buyer, but it does not purchase the product(s) in question for its own, direct use. Rather, the intention is to support private actors by providing them with the opportunity to buy new or alternative product(s). The real market penetration effect is eventually achieved by subsequent private demand.

1.3.3.3 Awareness raising, campaigns, labeling
Awareness raising actions supporting private demand have the role to bridge the information gap consumers of innovation have about the security and the quality of a novelty.

1.3.3.4 Lead market initiatives
A lead market is the market of a product or service in a given geographical area, where the diffusion process of an internationally successful innovation (technological or non-technological) first took off and is sustained and expanded through a wide range of different services. The “lead markets” with a sustainable potential cannot be artificially created. They can, however, be facilitated by offering best possible conditions for transforming ideas into new products and services. European Commission has taken several steps based on Aho report (2006) to unlock market potential for innovative goods and services by removing obstacles in view of enabling European enterprises to enter new and fast growing global markets as lead producers whilst at the same time benefiting European consumers in areas of particularly high economic, societal and environmental benefits. Also Commission wants to ensure that EU makes a significant contribution to bridging the gap between the generation of promising new products, services and technologies and their market success by creating conditions that facilitate the expression of demand, thus reducing costs and facilitating “first mover advantage” internationally.

1.3.3.5 Support to user-centered innovation
The democratization of innovation means that users of products and services, both companies and individual users, are increasingly able to develop what they need for themselves. Manufactured-Innovation means that companies develop innovations at private expense, then sell it.

User-Innovation means that lead users develop innovations that they need, then make it freely available. Lead users foreshadow a more general demand. But the concept should not obscure the fact that many
users innovate, and that such innovation is distributed amongst different players offering incremental parts of the solution. The cycle is most likely the following:

1) individual user develops innovation (invention, prototyping phase);
2) user diffuses innovation through networked media (information diffusion phase)
3) a community forms around it and develops a working prototype (pre-commercial replication phase);
4) a manufacturer may develop a commercial version adding some features (commercial phase)

2  Key Issues and Challenges

In creative economy there are two significant trends affecting the CCIs: the possibilities dealing with intellectual property business (trademarks, brands, copyright business) and the growing need of creative content in all other industries and in their business. These trends are affecting ways of production and changing work life. Cultural and creative industries are in the frontline in the process. The new evolution of using products and services and the growing markets of demand driven products and services will change production and value chain in all industries. This also affects the ways to consume and can be seen in the use of platforms and concepts that create new business models and bring business and consumers and producers closer to each other by removing the gap. The CCIs have a long experience producing new formats and concepts. (Finland Ministry of Employment and Economy 2012) The methods to accomplish demand driven innovations are being built on creativity.¹ There for in answering the growing need of demand driven innovations the CCIs can be seen in a special position.²

2.1  Digitalization and international markets

Digital technology and the internet are rapidly changing the way in which content is produced, marketed, and distributed to consumers (European Comission 2011, Green Paper). Demand driven innovations are related to this changing process. Via internet and social media digitalization has become inseparable part of CCIs business. (Stenvall-Virtanen, Grönlund, Norberg, Pönni & Toivonen 2011) Noteworthy still is that CCIs include great variety of different sectors whose ability to adapt and use demand driven methods, tools and technology varies significantly. Some sectors of the CCIs have already been digitalized (for example music, film and publishing industry), some sectors are based on demand and/or technology (for example

¹ Demand driven innovation methods
² Interview 20.10.2012: Petri Räsänen, Director of Innovation and Foresight, Council of Tampere region
architecture, software and game industry) and yet some sectors have only very limited connection to
digitalization. This points out the different basis CCIs have on digitalization and to use demand driven
innovation methods in their work and business.

The internet offers the audiovisual sector opportunities to develop its potential further, and to reach wider
audiences both within Europe and beyond. The European Comission’s Green Paper reflects on the effect of
technological developments on the distribution of, and access to, audiovisual and cinematographic works,
and started a debate on the policy options to develop a framework within which European industry and
European consumers can benefit from the economies of scale offered by the digital single market. From a
cultural and creative perspective, boosting the single market makes sense: while national markets may not
be large enough for niche productions, aggregation could increase the commercial viability of the overall
market. Furthermore, attractive offers of new audiovisual media services, including across borders, should
increase revenues for rights holders, and, alongside appropriate measures to address infringing behavior
including enforcement and cooperation by intermediaries, could help to address the significant levels of
piracy observed in the audiovisual sector. Such developments should also stimulate demand for higher
speed and network capacity, which creates the business case for investments in faster networks. (European
Comission 2011, Green Paper)

The changes in global business also challenge CCIs to exploit new models, channels and instruments to find
customers. The global competition in the open markets requires sustainable business model, specialization
and differentiation. CCIs must be encouraged to participate international markets to find potential
partners, co-operation and new customers (European Commission 2012). Increasing international
competitiveness is even more crucial for CCIs because the size of enterprises is usually small. International
aspect also brings ability to quickly respond to rapidly changing situations. CCIs also need support and
coaching when entering international markets. This support could be produced by bringing cultural content
and the development of online platforms.

2.2 Intellectual Property Rights

The intellectual property is a core issue when dealing with CCIs content production in digitalized
environment. This biggest changes have happened due to the development of digital technology. (Stenvall-
Virtanen, Grönlund, Norberg, Pönni & Toivonen 2011) World Intellectual Property Organization (WIPO) is
coordinating the development and the use of the international IP. Digital European Single Market, the Communication "A Single Market for Intellectual Property Rights" has set out a blueprint for initiatives to deliver an EU IPR framework rewarding creative efforts and facilitating cross-border activities in the internal market. As a result, the Commission adopted legislative proposals on orphan works and collective rights management. For those cultural and creative sectors relying on brands and customers’ loyalty, modernisation and adaptation of the trademark system are crucial. In the context of the EU Observatory on IPR infringements, better analysis of reliable data on IPR value and infringement, sharing of best practices and awareness-raising are needed to combat counterfeiting and piracy in an effective and efficient manner. Against this background, the Commission facilitates cooperation between intellectual property right holders and Internet platforms in the context of the Memorandum of Understanding on the sale of counterfeit goods via the Internet, which seeks to reduce, at a pan-European level, the offer of fake cultural goods on the internet. (European Commission 2012)

The protection of innovations and its copyright is vital for SME’s in CCIs. Because of their smaller recourses they need special protection so that bigger companies with bigger resources do not offend their rights to the innovation or new technology. The original inventor of innovation needs to be able to protect innovation also in open business model and enable the possibility of utilizing it his/her business as long as possible. In demand driven innovation processes the owner and distribution issues are more complex. The core questions are:

Who owns the service or product that has been developed in co-operation?
Who has the right to distribute it to its customers and in what channels?
Where does the rights of a business end and rights of the customer/distributor begin?

The legal system of intellectual property rights converts the innovative and creative output into property and thus into valuable tradable assets (WIPO 2005). The growing role of IP based assets in generating new value poses a number of major challenges for the corporate sector, governments, and the society at large: how to evaluate the value and contribution of IP and how to maximize its potential (ip4inno 2008).

---

3 http://www.wipo.int/about-wipo/en/
2.3 Enlargening the marketplace by multi-disciplinary co-operation: new partnerships and business models

Innovation has become a key competitiveness indicator and creativity is the core of it. The multi-disciplinary co-operation between CCIs and other industries is in the key role of making new and innovative solutions to different business challenges. Digital environment creates possibilities to utilize knowhow and assets of large groups and communities. This will grow the use of demand driven methods such as co-creation, crowdsourcing and -funding.

The CCIs need stronger partnerships between other industries, social partners and educational and training institutions. This should provide sectors with the mix of skills needed for creative entrepreneurship in a rapidly changing environment. To find these partners CCIs need multi-disciplinary environments. This requires the development and testing of better business support instruments and policies that aim to facilitate cross-sectoral linkages and spill-overs. It implies fostering change amongst the sectors themselves while adding new skills and competencies into other industries and vice versa. (European Commission 2012)

The platforms can push ahead the creation, production and distribution on all platforms of digital content and generate fair partnership between CCIs and other industries. Co-operation might also lead to innovative business models and new markets. Beside online platforms also physical places are vital for people from different background actually meet and build multi-disciplinary teams locally or regionally. Also the question of who should generate and maintain these kind of platforms is relevant. The role of the public sector is seen as an enabler but the actual development and operation work of platforms is seen as an objective work suited for non-profit organizations or development organizations.

The recommendation from the "Promoting cultural and creative sectors for growth and jobs in the EU"

---

5 KEA European Affairs 2012
6 Interview 5.11.2012 Ville Kairamo, Development manager, New Factory
   Interview 7.11.2010 Bernard Garvey, Facilitator, New Factory
7 Interview 5.11.2012 Ville Kairamo, Development manager, New Factory
   Interview 19.10.2012 Olli Ruokolainen, researcher of creative industries and regional development, Tampere university
• Reinforce cooperation across CCS and with other sectors such as ICT, tourism etc., including through joint initiatives to foster understanding across sectors and contribute to developing a more open, innovative and entrepreneurial mind-set in the economy.
• Encourage structured partnerships between the CCS, social partners and all types of education and training providers, including apprenticeships.
• Promote the recognition of qualifications in informal and non-formal education and training in fields that are relevant to CCS.
• Encourage and facilitate the setting up of platforms, networks and clusters between all public and private stakeholders that are relevant for CCS.

3 Demand Driven Innovation Cases

3.1 Pre-commercial procurement: Driving business innovation (Victoria, Australia)

<table>
<thead>
<tr>
<th>Context</th>
<th>Public procurements by administration build an important pillar of the total demand of products and services in most countries. Simultaneously, public administration has to deliver high quality services which can profit from innovative solutions for various problems. The Driving business innovation program is the successor of the Market Validation Program (MVP).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives</td>
<td>The program supports Victorian SMEs to develop new <strong>products and services for government customers</strong>. The program is based on the idea of demand-driven innovation with the <strong>customer taking an active part</strong> in each development stage of the new product or service. Hence, the participating government agency benefits from an innovative service tailored to their specific needs. The participating SME benefits from public funding during the innovation process and having created and tested a <strong>marketable product or service at the end of the project</strong>.</td>
</tr>
</tbody>
</table>
| Activities | The collaborative innovation process involves several stages:  
1. **Technological challenge**  
   o A government agency expresses a specific need which addresses a challenge to the delivery of their services.  
   o These challenges are then released as call for proposals  
   o SMEs are invited to propose new solutions to the released challenges  
2. **Feasibility study**  
   o Selected SMEs receive a grant to undertake a feasibility study ($75,000, 3 months)  
3. **Proof of concept** |
4. Market ready
   o SMEs can receive **further funding** to bring their developed solution to the market

The **Selection criteria for projects** are as follows:

- Commercial potential – including market potential outside the Victorian Government agency
- Innovative technology – the developed product must be new
- Achievable project – within the budget and timeframe of the program
- Economic impact – including jobs, exports and investment in Victoria
- Strategic alignment – with Victorian Government policy
- Governance arrangements – as set out in the program requirements
- Capability of Victorian Government agency and SME – as set out in the program requirements

The **SMEs own all intellectual property rights** developed in the project and are free to commercialize it. The Victorian government will negotiate a license to access the SME’s solution.

<table>
<thead>
<tr>
<th>Indicators</th>
</tr>
</thead>
</table>

**Actors**

The program is funded by the Department of State Development, Business and Innovation at the direction of the **Minister for Innovation, Services and Small Business**.

**Victorian Government agencies**

- The Technology Challenge stage is open to all eligible Victorian Government agencies.

**SMEs**

SMEs must meet the following criteria to be eligible to participate in the program, be registered in Victoria or carry out more than 50 per cent of their business activity in Victoria (based on proportion of FTE located in Victoria):

- be a non tax-exempt company incorporated in Australia under the Corporations Act 2001, with at least 51% of the applicant’s current business activities, employees or assets residing within Australia
- have a combined turnover (including each related body corporate) of less than $50,000,000 for each of the three financial years prior to lodgement of the application
- employ fewer than 200 employees
- have access to, or the beneficial use of, any IP necessary to carry out the project
- undertake not less than 80% of the R&D work in Victoria for the duration of the program
• have the Principal Investigator based in Victoria for the duration of Proof of Concept project

Results

Program has just started.

The MVP as predecessor has supported 32 Feasibility Studies and 15 Proof of Concept projects over two funding rounds.

With regard to cultural and creative industries especially the Intelligent Patient Journey System is of interest. This is an innovative software platform for management of patient stays in hospitals which was developed within the framework of the MVP.

3.2 “New Factory” (Finland)

Context

In response to the economic structural change which was hitting the Tampere region, the support of creative industries was identified as one mean to cope with the challenge. As a regional policy measure the Creative Tampere Programme (2006 - 2011) focused on the development of creative industries, innovation and entrepreneurship and an attractive city region. The general goal of the programme was the creation of new jobs und support the renewal of existing ones. The programme was funded and implemented by the city of Tampere. It included 126 projects in the fields of creative industries, social innovations, arts, new technologies etc.

Creative industries remain in the focus in the Tampere region also without the support of an actual programme. For instance, the city of Tampere hosts the Creativity World Forum in January 2014.

One of the facilities which support economic development in the creative industries and has its origins in the Creative Tampere Programme (the Demola project) is the New Factory which offers an open innovation environment. With regard to demand driven innovation especially the activities Demola and Suuntaamo are of interest.

Objectives

The New Factory as open innovation platform shall contribute to the renewal of economic structures and expansion of the regional innovation ecosystem by facilitating cross-sectoral cooperation and innovation. The platform provides an environment for more efficient processes with regard to customer-driven and customer-oriented product and service development.

The main goal is to create new business and jobs.

Activities

Demola (funding 200,000 per year)
Private companies collaborate in innovation processes with students of the local universities.
- Companies give a problem to solve.
- Demola facilitators connect the company (project partner) with a multidisciplinary team of students (company as customer expresses demand).
- This team works on an innovative solution for the problem under the supervision of a facilitator.
- Within three months after the completion of the project the company can license the results.

**Suuntaamo (noch öffentlich gefördert?)**
As a living lab Suuntaamo is a platform to integrate user experiences into innovation processes (demand of end-users). The following services are offered:

- User testing and expert evaluation
- Recruitment of participants for
- User-centered market research and consulting services

### Indicators

- Number of projects
- Number of people involved
- Number of foreign students involved
- Number of jobs created
- Number of new companies
- Percentage of completed projects licensed by project partner

### Actors

**Students** from the local universities develop innovative solutions for the expressed demand/problems of private companies.

Private companies which express their demand (Demola) or ask for feedback (Suuntaamo).

**Citizens** are involved in the development of new products and services.

Hermia Ltd, a private non-profit organization, is responsible for the rooms of New Factory and their operations (neutral ground).

New Factory is supported by:

- City of Tampere
- Council of Tampere Region
- Centre for Economic Development, Transport and the Environment of Pirkanmaa
- Tampere University of Technology
- University of Tampere
- Tampere University of Applied Sciences
- Tampere Chamber of Commerce
- Centre of Expertise Programme
- Tampere Region Economic Development Agency
### Context
The Telekom Innovation Labs are the central research and development unit of the Deutsche Telekom. Based on the campus of the Technical University of Berlin it is a private research institute attached to the university. More than 300 people work at the T-Labs, 180 are directly employed by the Deutsche Telekom. Following the concept of open innovation the research and innovation development activities involve partners not only from the TU Berlin but also from other high profile research institutes (e.g. Stanford, Princeton, Cambridge) and other companies (SAP, BMW,...) and start-ups.

A key project of the institute is the User-Driven Innovation (UDI) project that analyzes customer wishes that have yet to be expressed and then develops innovative solutions and products together with potential users.

### Objectives
Generally, the results of the institute’s work (e.g. patents, ideas, prototypes) are transferred to the Group's strategic business units or are used to establish spin-off organizations.

The objective of the UDI project in particular is to analyze the needs of customers by getting very close to their real life circumstances. The gained insights of this project support technical innovation projects of the T-Labs, preferably already at a very early stage.

### Activities
An interdisciplinary team of economists, psychologists, designers and social scientists explores, plans and applies new, *custom-developed qualitative and quantitative research methods* such as ethnographic field studies, user clinics, business modelling and agile user experience evaluation methods. The application of these methods can be attributed to five stages:

- Foresight: Identification of promising directions for exploration and trends (example: scenario analysis)
- Exploration & ideation: in-depth search for customer needs (example: field research) and development of new ideas for products and services (example: ideation workshop)
- Selection: Identification and implementation of promising ideas (for instance online bus study)
- Concept & modeling: user driven development of ideas and creation of business models (example: co-creation workshop)
- UX Testing: design and evaluation of concepts and prototypes (example: field test)

Key to the success of these methods is the identification of an appropriate panel of customers. UDI relies on an innovation forum, which it has set up specifically to recruit customers and test subjects. It is an exclusive group of more than 1000 individuals from Berlin and Brandenburg. Members take part in online studies but are also available for face-to-face discussions. Especially three groups are involved in the discussion of specific questions:
- External experts
- **Lead users**: these are users which are ahead of the market and have a high motivation to solve problems related to the market.
- **Users of face-to-face studies**: these are identified out of the panel based on the special need for feedback (usability testing, ideation workshop, user observation,...)

The personal perceptions and appraisals of members of the innovation forum directly affect the design of new products.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>number of innovative ideas generated and selected number of ideas leading to products or services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General indicators of T-Labs: Typical R&amp;D indicators</td>
</tr>
</tbody>
</table>

| Actors      | Deutsche Telekom as a private company, TU Berlin as a university, external experts, external companies and research institutes, **users** (including sub-category lead users) |

| Results     | Example: an ideation workshop with 13 internal and external experts as participants was held to generate new ideas for the mobile wallet service. As a result 26 ideas were identified as potential future wallet services, 11 are envisaged for final implementation. |

### 3.4 Design Factory, Media Factory, Service Factory (Aalto University Finland)

<table>
<thead>
<tr>
<th>Context</th>
<th>The Aalto University was created from the merger of three Finnish universities: The Helsinki School of Economics, Helsinki University of Technology and The University of Art and Design Helsinki. This combination opens up new possibilities for strong multi-disciplinary education and research. The new university's ambitious goal is to be one of the leading institutions in the world in terms of research and education in its own specialized disciplines. The Design Factory, the Media Factory and the Service Factory are platforms combining the expertise of the different Aalto University schools in the fields of product development, media and services; these are fields on which the Aalto University schools have already cooperated on actively.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives</td>
<td>The Factories are designed to facilitate new forms of collaboration in an environment where academic teams, researchers and students work together with companies and communities. The themes of teaching and learning are an important part of the Factory activities – the new knowledge produced by research is smoothly transferred to teaching.</td>
</tr>
<tr>
<td>Activities</td>
<td>All three factories are created as open collaborative networks which bring together people from different backgrounds and disciplines. The Media Factory and Design Factory offer various facilities for courses, workshops, prototype development and open work spaces. These facilities are not only open to</td>
</tr>
</tbody>
</table>
students and academics but also the public (open Tuesday).

With regard to demand driven innovation activities in all factories especially focus on the connection of education and real life challenges of the industry:

- The Service Factory offers firms the realization of customized student business projects. By working on real life service related business problems groups of 2-5 students, supervised by a senior researcher, learn how to research and develop innovative solutions for companies. And the companies get new inputs to solve their problems which can even results in concrete process or service innovations.
- The biggest courses at the Design Factory are usually working together with companies which provide a challenge, budget and mentors. This format regularly provides new findings or functional prototypes for the participating firm.
- Courses in the Media Factory also co-operate with business partners who may provide special challenges or needs (for instance design projects).

<table>
<thead>
<tr>
<th>Indicators</th>
<th>The following indicators are not all related to demand driven innovation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of students involved</td>
</tr>
<tr>
<td></td>
<td>Number of collaborating business partners</td>
</tr>
<tr>
<td></td>
<td>In-house companies</td>
</tr>
<tr>
<td></td>
<td>Background of teachers, students &amp; researchers</td>
</tr>
<tr>
<td></td>
<td>Number of Visitors</td>
</tr>
<tr>
<td></td>
<td>Purpose for using facilities</td>
</tr>
<tr>
<td></td>
<td>Usage of facilities</td>
</tr>
<tr>
<td></td>
<td>Number of courses</td>
</tr>
<tr>
<td></td>
<td>Number of publications</td>
</tr>
<tr>
<td></td>
<td>Finalized thesis</td>
</tr>
<tr>
<td></td>
<td>Conferences attended</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actors</th>
<th>Students, industry, academics, “outsiders”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results</td>
<td>Several launched interdisciplinary research projects</td>
</tr>
<tr>
<td></td>
<td>Successful industry academics cooperation</td>
</tr>
<tr>
<td></td>
<td>Fully booked facilities</td>
</tr>
<tr>
<td></td>
<td>More involvement of industry desirable for Media Factory</td>
</tr>
</tbody>
</table>

3.5 OpenLab: co-creation between disciplines (UCSC, Santa Cruz USA)

| Context      | OpenLab’s origins are based on the finding of Professors Jennifer Parker and Enrico Rameriz-Ruiz that the campus of the University of California Santa Cruz did not offer students the opportunity to step out of their specialties and make use of facilities and human capital in other departments although initiatives to co-operate cross-disciplinary came from students who sought assistance to turn their ideas into physical prototypes. |
A Summer Institute held in 2011 was the pilot program for OpenLab which is now a Research Center at the University of California Santa Cruz founded by Professors Jennifer Parker and Enrico Ramirez-Ruiz.

### Objectives

The Center targets complex education issues regarding the ability of art and science researchers to collaborate on research endeavors. The goal of the OpenLab is to provide shared research facilities and create a network for collaborative discourse fueled by academic communities, arts and science communities, and industry.

The main objective is to visualize scientific research in collaborative projects. In this way the demand for innovative designs, to make the abstract tangible, is expressed by members of the scientific community.

Art is seen as vital to science, as it can help convey complex concepts to the masses through more accessible 3-D venues, such as apps, games, and exhibits.

### Activities

The activities of OpenLab are built on two pillars.

- **First**, OpenLab is a network which connects people of different communities. Especially it brings together artists and scientists.

- **Second**, OpenLab provides the virtual and physical environment which facilitates collaborative research projects.

The following types of facilities can be used in innovation projects:

- The casting lab is both a foundry and mold-making space. It supports sand and investment casting, plaster, wax, rubber, and silicone casting, as well as metal and plastic filing, sanding, and polishing.

- The Super Computer Lab is a workspace for high-performance computing.

- The metal fabrication shop provides a multitude of machines and several welding stations. This shop facilitates a variety of welding processes including, TIG welding, MIG welding, Oxyacetylene welding, and brazing.

- The digital imaging room is a space for printing professional, digital images. Equipped with twelve computers with scanners, large format printers, and slide scanners. Each computer has professional design software.

- The photo studio is professionally equipped and provides an environment for documenting projects and photographing objects and/or people for web or print.

- A print lab accommodates lithography, intaglio, silkscreen, book making and digital printmaking.

- The wood shop supports all processes involving wood and acrylic. It can be
used for fine woodworking, large scale projects, small scale models and prototypes. This work area is equipped with large machines and hand tools.

| Indicators |  
|---|---|
| Actors | Especially researchers and students from science and art. Furthermore, other members of the related communities and industry. |
| Results | Project examples: |
|     | • Nomadpad is committed to providing a free and accessible multifunctional product designed to deliver comfort and protection to those who are imposed-by the difficulties of the urban nomadic experience. Nomadpad is a nondiscriminatory, non-profit organization whose aims are to successfully supply a utilitarian product available to all users in the community of the city. |
|     | • Astrophysics Visualization Lab: visualizations of physics models to help researchers and the general public develop a sense of what happens during certain interactions between stars and super massive black holes (SMBHs). |
|     | • Oceanic Scales - Oceanic Scales is a place to learn and to be inspired about phytoplankton, the first link in the oceanic food chain. This project explores biomimicry as a tool. It explores the tipping point between humanities desires and the oceans needs. |
|     | • The THRIVEfamilyLAB is a new initiative for the creation of iPhone/iPad APPS for parents in the NICU and at home. In addition to the creation of new APPS, the THRIVE familyLAB will provide inter-disciplinary training for professionals, Infant Observation Courses and pregnancy accompaniment groups from the THRIVE director, Julie McCaig in association with artists, infant researchers, scientists, and with the help of THRIVE’S Forward Observer and THRIVE President, Vladimir Lipovetsky, M.D. |
|     | • The Innovation and Design Lab (IDL) is devoted to creating and publishing new knowledge in the health and wellness industries through a holistic approach to innovation and design research that generates products, tools, services, and solutions to improve health outcomes. |
|     | • Most recently, they helped to create the Kepler Explorer, a new application for the iPad and iPhone, allowing armchair explorers of the cosmos fingertip access to nearly 2,000 distant planetary systems discovered by NASA’s Kepler Mission. Parker and others from the OpenLab Network will be at Marker Faire, showing the Kepler app, a Nintendo Wii Galactic Center Bowling game, and other OpenLab projects. |
### 3.6 Forschungscampus Connected Technologies (Germany)

<table>
<thead>
<tr>
<th>Context</th>
<th>Following call for proposals by the Federal German Ministry of Education and Research (BMBF) 10 public-private partnerships of industry and academia were granted public funding to establish long-term innovation platforms (up to 15 years). Each selected Forschungscampus will receive funding of 1 to 2 million euros per year as an orientation framework. The partners involved will also contribute significant resources. The idea of these platforms is to encourage industry partners to invest directly and sustainable in scientific research. As a return the industry receives assistance of research institutes for solving complex problems in high-risk research fields.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives</td>
<td>The potential for radical innovations is intended to be unlocked for economic purposes. New technology leaderships shall be developed through interdisciplinary approaches and an early integration of user demands into the research and innovation processes. Complementary objectives are the training of junior researchers, further education of staff or the internationalization of research activities. The Forschungscampus Connected Technologies focuses on providing technological foundations to connect devices and systems in the home environment. The goal is to offer smart assistance in various living situations to the residents of connected homes.</td>
</tr>
<tr>
<td>Activities</td>
<td>In the “Sensor-based health services” research project, innovative domestic and mobile service modules are being developed based on ambient sensor components close to the body. They serve to improve and maintain health as well as support independent living. Partner in this project is the Johanniter-Unfallhilfe which is a leading provider of health services in Germany. In a later stage of the project also end-user shall be involved in the research project. The aim of the “Interaction and sensors” research project is to design usage concepts for intelligently networked environments, and to develop the necessary technology for so-called &quot;generic&quot; sensors and actuators. Scenarios are therefore being developed for intelligently networked environments, whose design also involves users from local neighbourhoods.</td>
</tr>
<tr>
<td>Indicators</td>
<td>-</td>
</tr>
<tr>
<td>Actors</td>
<td>Academics, industry, end-user</td>
</tr>
<tr>
<td>Results</td>
<td>Projects have not finished yet.</td>
</tr>
</tbody>
</table>
4 Preliminary Policy Recommendations

The policy instruments of demand driven innovation policy introduced here are in the field of development of incentives, infrastructure and operating model improvements and regulatory reform.

4.1 Use the opportunities of public procurements as a tool for boosting the CCI lead markets and to open new market opportunities for CCI’s

Promote public procurement in order to enrich the procurements and their match to user preferences and productiveness (for example by utilizing CCIs in collecting end user preferences and requirements).

Build concepts, programs and operating procedures for the usage of CCI’s in pre-commercial procurement projects.

Consider developing policies supporting CCI SMEs in public procurement processes.

Consider using public procurements in creating fore runner reference markets, test beds and public-private-partnerships to enhance the promotion of new business opportunities for CCIs.

4.2 Build national and regional (cluster-based) co-creation platforms working in international networks

Build national (virtual and physical) platforms that support more effective interactions between creative industries, other business sectors and science. The platforms should be based on the principles of open platform concept and bring creative industries and services in the middle of co-creation communities developing new innovations, products and services. This will improve the possibilities for CCI companies to join co-creative projects.

The platforms and networks should have strong approach to co-creation and combining different talents. The platforms need to have local, regional and national characteristics and be formulated in the way that they can be best exploited in each ecosystem. An international network approach between different platforms is essential in enhancing the European competitiveness over all.

The platforms need to have a comprehensive approach and facilitated processes as well as business development services such as accelerators to promote innovations, start ups and growth of CCI businesses.
4.3 Promote the awareness and experiences to increase the demand for CCI’s

Promote the cooperation and ‘match making’ of CCIs with other industries to enhance the use of CCI competencies to increase the demand of the services and products of CCI companies. Consider promoting the ‘match making events’ throughout Europe under a common brand and strengthen the European cooperation to enhance the European CCIs competitiveness over all.

Develop financial tools to promote the cross clusteral cooperation. Develop ‘match making events’ together with new innovation voucher schemes to offer the first experiences of cooperation.

Promote the understanding of CCI opportunities and user experiences by establishing show rooms. These are used for demonstrating the new and attractive value added offered by CCI companies and thereby attracting other industries to utilize them (e.g. demonstrating the possibilities of new media or gamification in building the learning environment for intelligent forestry machines).

Provide funding for developing first demo products by establishing a quick and easy funding scheme.

4.4 Favor CCI involvement in innovation funding

In funding decisions, favor RDI projects of traditional industry companies utilizing the services of cultural and creative industries. This will stimulate the demand for the services of CCI companies in future RDI projects.

Look further into possible introduction of standards and regulative actions for boosting the usage of CCI services.

(Introduce innovation vouchers as a tool to stimulate demand together with ‘match making’ events. Innovation vouchers should be used for giving companies the first inexpensive and good experience of the usage of CCI services.)

4.5 Support and enhance the professionalism of user communities

Channel supportive actions to user communities instead of individuals for wider spread benefits and thereby create more competitive collections of CCI products and services (instead of individual services).

Build up living labs, user communities, test beds and enhance user led innovation based startups.)
Enhance the development of user communities into professional-driven and business-driven communities exploiting the opportunities offered by open innovation platforms and new ppp-possibilities (e.g., user-based service design).