VTT Technical Research Centre of Finland

In search of Finnish creative economy ecosystems and their development needs

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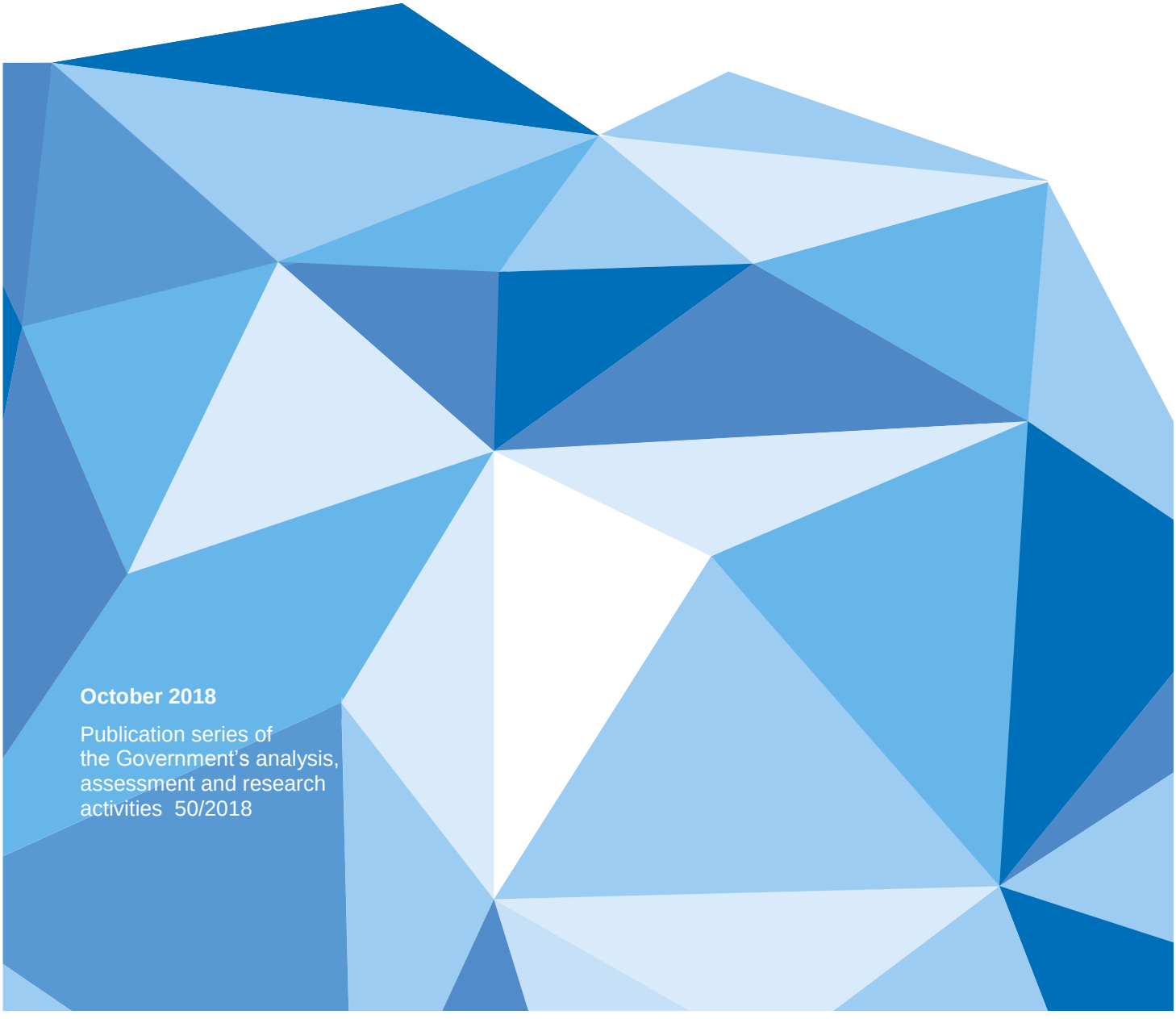
In search of Finnish creative economy ecosystems and their development needs – study based on international benchmarking



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Abstract

This report reviews the status of domestic creative economy ecosystem development, benchmarks creative economy focused policies and models in the United Kingdom, the Netherlands and the Republic of Korea (South Korea), and gives recommendations on how to support cross-sectoral use of creative competencies in ecosystem development in Finland. In the review of creative economy in Finland, creative activities are grouped into four categories (creative and cultural products, creative content, creative services, creative environments and platforms) that differ from each other in terms of value creation logic, easiness of scalability and recycling of intangible value, and the role of interaction and communities in the value creation process. This categorisation has been applied in updating the creative sector fact sheets.

International benchmarking shows that official recognition, champions and organisations are needed to establish a common voice for creative sector actors. These have had an important enabling role for proactive policies supporting the creative sectors' development. Strengthening of creative activities and connecting them firmly to wider regional and national networks across the economy are on policy agenda in all the three benchmarking countries. Supporting cross-sectoral collaboration and wider use of creative competencies calls for a clear national policy recognising pivotal role of regional hubs, attention to fostering practise oriented business skills in initial education, and flexible arrangements for accessing complementary expertise and facilities. To improve the availability and relevance of data on creative activity, we propose to study and pilot the use of textual data and text mining techniques to complement official statistics on economic activities, and systemise data collection on publicly funded projects. For ecosystem development, the public-private partnership model based *growth engine* initiatives of Business Finland could offer a platform for cross-sectoral collaboration and for connecting regional hubs with national and global ecosystems.

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Tiivistelmä

Tämän selvityksen tavoitteena on ollut tuottaa uudelleen jäsennelty ja päivitetty versio luovien alojen ekosysteemitiedoista, kartoittaa luovan talouden kehittämismalleja Britanniassa, Hollannissa ja Etelä-Koreassa, ja tehdä ehdotuksia luovan osaamisen monialaisen hyödyntämisen ja ekosysteemikehityksen edistämiseksi sekä päätöksenteossa tarvittavan luovaa taloutta koskevan tietopohjan vahvistamiseksi. Luova toiminta on selvityksessä jaettu neljään luokkaan; taide ja kulttuuri, luovat sisällöt, luovat palvelut, sekä luovat ympäristöt ja alustat. Nämä eroavat toisistaan arvonluonnin logiikan, toiminnan skaalautuvuuden ja aineettoman arvon kierrätettävyyden osalta. Myös vuorovaikutuksen ja yhteisöjen rooli arvon luomisessa ja tuottamisessa vaihtelee luovien toimintojen välillä. Luokittelua on sovellettu luovien alojen ekosysteemitietojen päivityksessä.

Kansainvälinen vertailu osoittaa, että luovien alojen yhteisen äänen vahvistamisessa on suuri merkitys toiminnan tunnistamisella päätöksenteossa, alan aktiivisilla puolestapuhujilla (champions) ja yhteisillä organisaatioilla. Luovan osaamisen ja luovan toiminnan vahvistaminen ja kytkeminen alueellisiin ja kansallisiin verkostoihin toimialoja poikkileikkaavasti on huomioitu osana talouden kehittämistä kaikissa vertailumaissa. Luovan osaamisen laaja-alainen hyödyntäminen ja monialaisen yhteistyön kehittyminen edellyttää alueellisten osaamiskeskittymien roolin huomioivaa selkeää kansallisen tason politiikkaa, käytännön liiketoimintaosaamista sekä monialaista yhteistyötä tukevan toimintakulttuurin edelleen vahvistamista perusopinnoissa, ja joustavia malleja täydentävän asiantuntemuksen ja muiden resurssien hyödyntämiseksi luovien alojen kehittämistoiminnassa. Business Finlandin kasvumoottori-aloite voisi toimia monialaisen yhteistyön alustana ja kytkeä alueelliset osaamiskeskittymät laajempiin ekosysteemeihin kansallisesti ja globaalisti. Luovien alojen toimintaa koskevan tiedon saatavuuden ja edustavuuden parantamiseksi selvityksessä ehdotetaan, että virallisten tilastoaineistojen täydentämiseksi selvitetään ja pilotoidaan tekstipohjaisten aineistojen ja tekstinlouhinnan mahdollisuudet. Lisäksi suositellaan julkista tukea saaneiden hankkeiden seurantatiedon systematisointia mm. käytettävien luokitusten osalta.

Tämä julkaisu on toteutettu osana valtioneuvoston vuoden 2018 selvitys- ja tutkimussuunnitelman toimeenpanoa (www.tietokayttoon.fi).

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Sammandrag

Syftet med denna studie är att kartlägga status av ekosystemutveckling i den kreativa ekonomin och att uppdatera information om kreativa branscher i Finland, samt att utföra en jämförelse av utvecklingsåtgärder av den kreativa ekonomin i Storbritannien, Nederländerna och Sydkorea och att ge rekommendationer om hur man stärker tvärsektoriell användning av kreativ kompetens och ekosystemutveckling i Finland. Den kreativa verksamheten delas in i fyra kategorier: konst och kultur, kreativa innehåll, kreativa tjänster, kreativa miljöer och plattformar. Kategorierna skiljer sig åt gällande logik för värdeskapande, verksamhetens skalbarhet och möjlighet att cirkulera immateriella värden. Rollen av samspel när det gäller att skapa och producera värde varierar också mellan de kreativa aktiviteterna inom olika kategorier. Denna klassificering har använts för att uppdatera de så kallade faktabladen för de kreativa branscherna i Finland.

Enligt en internationell jämförelse, behövs officiellt erkännande, förespråkare (champions) och organisationer för att skapa en gemensam röst för den kreativa sektorns aktörer. Dessa har haft en viktig, möjliggörande roll för den proaktiva politik som stöder den kreativa sektorns utveckling till exempel i Storbritannien och Holland. Att stärka de kreativa aktiviteterna och ansluta dem till bredare regionala och nationella nätverk finns på agenda i alla tre länder. Ett tvärsektoriellt samarbete och bredare användning av kreativa kompetenser förutsätter 1) en tydlig nationell politik som erkänner de regionala kompetenscentrans viktiga roll, 2) vidare främjande av praxisnära affärskompetenser och färdigheter som krävs för företagande inom grundutbildningen och 3) flexibla modeller för användningen av komplementära kompetenser och andra resurser i utveckling och innovation inom de kreativa branscherna. Business Finlands PPP-baserade tillväxtmotorinitiativ kan fungera som en plattform för tvärsektoriellt samarbete och länka regionala kompetenscentra till bredare ekosystem nationellt och globalt. För att förbättra representativiteten av information om verksamheten inom de kreativa branscherna, föreslår rapporten att potentialen för textbaserat material och text mining utforskas och testas. Dessutom rekommenderas att datainsamlingen om offentligt finansierade projekt systematiseras.

Den här publikation är en del i genomförandet av statsrådets utrednings- och forskningsplan för 2018 (tietokayttoon.fi/sv).

CONTENTS

1. INTRODUCTION

1.1. Background of the study

This study has three objectives:

- Review the status of creative economy ecosystems development in Finland and present the results in an updated and newly arranged version of the creative sector Fact Sheets (original publication *Facts Sheets Luovat alat 2010*).
- Benchmark models and policies used to advance creative economy development in the United Kingdom (UK), the Netherlands and the Republic of Korea (South Korea) – international forerunners in the design and implementation of proactive policies in favour of creative economy.
- Identify and recommend actions supporting ecosystem development and embedding of creative competencies cross-sectorally in Finland[1], and make recommendations for the improvement of systematic monitoring and assessment of creative economy development.

Implementation and methods used

The study consists of three work packages based on the above objectives. First work package (WP1) focuses on updating the creative economy Fact Sheets, the second (WP2) comprises the benchmark study of cross-sectoral policies and models in creative areas in three countries (United Kingdom, Netherlands and South Korea), and the third (WP3) outlines recommendations supporting ecosystem development in and beyond creative areas in Finland.

In **reviewing and updating the fact sheets** (WP1), the sectors covered were re-grouped based on selected elements and characteristics derived using different data gathering and analysis methods.

1. Review of existing literature and the 2010 Facts Sheets provided the background information for the fact sheet update and preliminary understanding of the constituent elements of creative economy in Finland. Our statistical analysis of creative growth potential replicates the method applied by NESTA[2] in the United Kingdom and draws on official industry and occupation statistics. More detailed statistical information is provided in Appendix 1.

2. A brainstorming workshop with key stakeholders was organised to discuss and determine definitions of creative economy areas and identify ecosystems and their key players with the most significant growth opportunities. VTT's online co-development tool Owela (https://owela.fi/) provided a platform for continued discussion with

[1] The original objective was to develop a proposal for organisation and coordination of a creative economy ecosystem initiative as part of the activities of the newly established Business Finland and regional growth services under preparation in the context of regional reform. However, it was noticed during the process that creative domains conventionally clustered under the 'creative industries' label constitute a heterogeneous group of branches, which should be taken into account in support actions and policies. Therefore, proposals drafted in the report are based on the categorisation of creative sectors presented in Chapter 2 of this report. Furthermore, it seems that the individual branches also need branch-specific actions even if there are some commonalities under the four main areas.

[2] National Endowment for Science, Technology and the Arts

stakeholders and for gathering insights on the potential and challenges of cross-sectoral collaboration between creative and other sectors.

3. In-depth interviews were carried out with 22 interviewees well versed in creative economy development in Finland. Appendices 3 and 4 lists the national interviewees and workshop participants. Key results of the review with analysis of the main strengths and weaknesses of ecosystem development in creative areas in Finland are presented in Chapter 2.

Benchmarking of international practises (WP2) in the selected three countries focused on policies and arrangements that promote cross-sectoral collaboration, so-called crossovers, in harnessing potential in intangible capital and creative competencies across the economy. The emphasis on crossovers is well-substantiated taking into account that creative competencies can be utilised and contribute to the competitiveness of the economy broadly beyond those sectors conventionally understood as creative. Comparison of international practices is based on a review of relevant recent literature as well as telephone and skype interviews with identified experts in the benchmark countries (see Appendix 5 for list of international interviewees). In addition, local experts involved as subcontractors have contributed to the analysis in the case of the Netherlands and the UK. Chapter 3 of this report consists of country reports and a summary of the main results of the international benchmark.

In drafting **policy recommendations** (WP3), attention was paid to opportunities to advance ecosystem development and crossovers within and beyond creative sectors. The recommendations should be interpreted against rearranged categories of creative sectors and different stages of ecosystem development. Creative sectors are heterogeneous groups of actors and differ from each other with respect to logic of action, immediate growth potential and opportunities for crossovers with other sectors of the economy. This variety needs to be taken into account in policies aiming to support ecosystem development and wider use of the potential that creative competencies hold for growth and internationalisation – one size does not fit all when it comes to policies targeting creative sectors.

The recommendations for systematic monitoring and assessment of creative economy development are based on a thorough analysis of existing official statistics on sectors and occupations in WP1, insights provided by the international benchmarks, and assessment of cross-sector collaboration at the project level in the case of three domestic funding instruments. Cross-sector collaboration and demand for creative competencies are analysed for CreMa funding 2012-2017, the ESF-funded Creative Expertise programme, and the Innovation Voucher of Tekes/Business Finland. The recommendations are presented in Chapter 4.

1.2. Creativity and economic development

Policy discussions on the importance of creativity for economic growth and development in different territorial frames have proliferated in Finland and abroad since the turn of the millennium. The rise of interest in the relationship between creativity and economy connects with the recent emphasis on innovation and differentiation as sources of competitive advantage in the context of increasing international competition. Indeed, creativity and innovation are essentially part of the same process; creativity can be defined as an ability to combine meanings and elements in novel ways, whereas innovation refers to the ability and

courage to transform creative ideas into new products, services and practices (adopted from the definitions given in the final report of the working group preparing a creativity strategy for Finland; Yksitoista askelta luovaan Suomeen, 2006).

Drivers of the 'creative turn' listed in literature include on-going changes in industrial mass production and international division of labour, which call for new sources of sustainable growth and added value in (developed) economies. These changes are linked to a long-term shift in economic structure as, in relation to GDP, share of services has continued to grow whereas share of industry producing tangible products has been in decline. Technological development, particularly ICT as a generic technology and the way it enables ever-growing digitalisation of goods and services, is changing society rapidly. Digitalisation challenges existing practices while simultaneously creating new opportunities for immaterial value creation. Changes in lifestyle and values are also important drivers impacting consumer perceptions and preferences and accentuating demand for intangible services and experiences. Furthermore, understanding of the concept of creativity has been widening over time. (e.g. Canadian Heritage, 2013)

Several interrelated and partly overlapping constructs have been introduced to describe and explain the key role of creativity in economic and territorial development. Approaches focusing on the sectoral dimension include, for example, cultural industries (UNESCO/GACD, 2006), creative industries (Creative Industries Task Force, 1998), copyright industries (WIPO, 2003) and content industries. More encompassing constructs circulating in the discourse include experience economy (Pine and Gilmore, 1998), creative economy (Howkins, 2001), and creative class (Florida, 2002), to name a few.

In Finnish policy making, the contribution of creativity to economic development has been framed especially through three terms; creative industries, creative economy and intangible value creation.

1.3. Creative industries, creative economy and intangible value creation in Finland – Fast rewind

At the national level, the Ministry of Education and Culture (OKM) and the Ministry of Economic Affairs and Employment (TEM and its predecessor KTM) are the principal public bodies involved in the planning and implementation of policies connected with creativity and the integration of creative competencies in business and society in Finland. Starting from the late 1990s, the ministries have developed policies in close cooperation following a joint agenda.

Since the early 2000s, the two ministries have published a number of strategic policy documents, reviews and assessments dealing with the promotion of creativity and wider use of creative competencies in the Finnish economy. As part of its mandate, the Ministry of Education and Culture has focused on outlining and implementing policies supporting arts and culture and cultural export. Allocation of funding for product and service development in this

area is an important element of the support provided.[3] National implementation of the European Social Fund programme is another policy instrument used to support expertise and innovation within the cultural and creative sectors and in cooperation with other sectors.[4] The Ministry of Education and Culture has also been active in strengthening the knowledge base regarding the development of the cultural industries (development of so-called culture satellite accounts in cooperation with Statistics Finland).

The Ministry of Economic Affairs and Employment together with the agencies under its administration have focused on supporting business development and promoting companies in search of new sources of value creation. A part of this support is funding for companies' research and development activities allocated by the Finnish Funding Agency for Innovation - Tekes (now operating as Business Finland after merging with Finpro in 2018). Nationally coordinated regional development programmes (e.g. AKO and KOKO programmes) have also provided channels to advance and tap into creative potential in business development and value creation.

Figure 1 presents a selection of documents published by the two ministries over the past twelve years. In addition to those listed here, several other reviews and reports with specific recommendations have been prepared at the national level regarding, for example, public funding and its suitability for firms in creative industries, export of creative products and services, and increasing use of design expertise in business, public sector and society.[5]

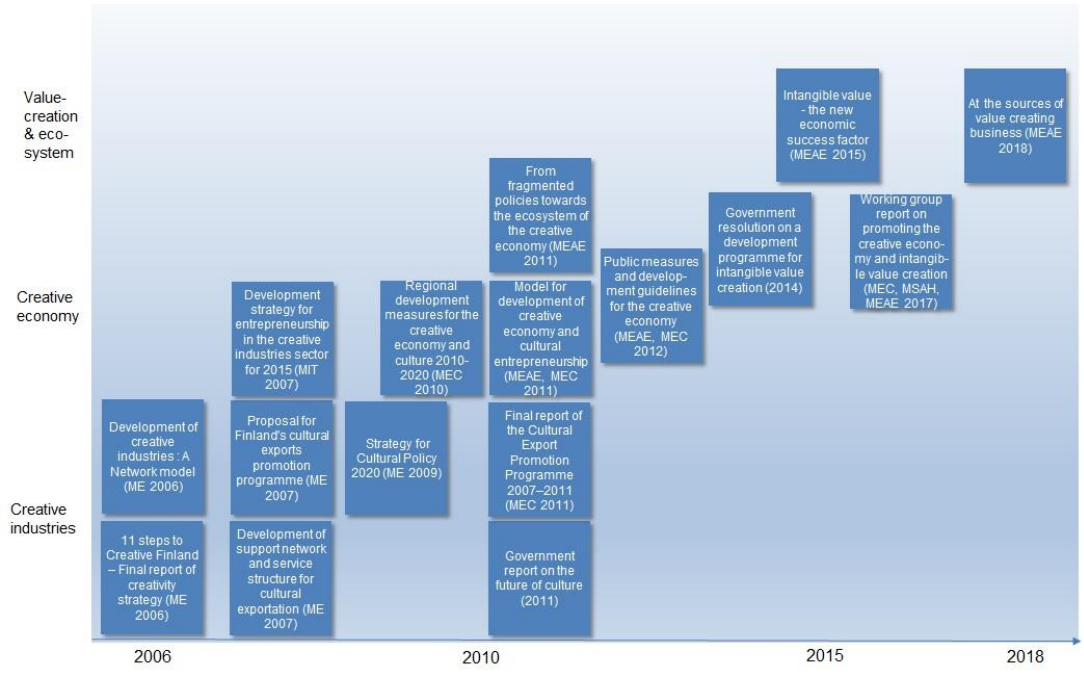


Figure 1. Policy reports published by the Ministry of Education and Culture and the Ministry of Economic Affairs and Employment 2006-2018.

[3] The Ministry of Education and Culture allocates funding for the development of ideas into concepts, pilot projects, prototypes and demos in the form of DigiDemo, CreaDemo and CreMA subsidies, which are operated by the Promotion Centre for Audiovisual Culture AVEK.

[4] During the current programming period 2014-2020 the Ministry of Education and Culture and the Ministry of Economic Affairs and Employment are jointly coordinating the implementation of a Creative Expertise programme aimed at advancing the integration and use of creative potential across sectors.

[5] Funding is in focus for instance in 'Julkinen rahoitus luovien alojen yrityksissä' by Ramboll Management Consulting in 2013 and 'Luova raha. Näkökulmia luovien alojen rahoitukseen' published in 2011 in context of creative economy strategic initiative administered by the Ministry of Economy and Employment. Reports on export include e.g. the project report of 'Luova vienti' (Creative export) project in 2011. Interim review of Design Finland programme assessed progress of the programme in 2017.

Our literature review shows that the policy focus in Finland has shifted gradually from more narrowly defined 'creative industries' towards the integration and use of creative competencies across the economy ('creative economy') and the broader context of intangible value creation. Concurrently with this evolution towards intangible value co-creation, new concepts have emerged: information society, bioeconomy, cleantech economy, circular economy, doughnut economics, platform and sharing economy are all referring to system-level changes in society and economy and the significant need to understand new competitive advantages (systemic transition is discussed in the next section). The dynamics of change reverberates and have impact on modes of production, distribution and consumption.

In the early 2000s, in line with the international discussion, the concepts 'creative industries' and 'creative economy' were adopted in Finnish policy making to describe, analyse and make actionable the relationship between creativity and economic activities including exports. The emergence of the sector-focused 'creative industries' concept was linked with the awareness that the economic importance of sectors deemed creative was growing. In comparison, the 'creative economy' as a more extensive idea emphasised the potential contribution of creativity and creative capabilities to economic development irrespective of sectors. This would take place through a cross-sectoral approach integrating the creative sectors' offerings and competencies with the activities of other public and private sector actors. From this perspective, creative industries and creative economy focused policy making has had a twofold aim: to advance activities within the more narrowly defined creative domain, and to create the conditions for increased interaction and collaboration with actors from other sectors using the creative competencies and skills residing in the creative sectors.

Regarding creative industries, there has been no universally agreed standard definition of the fields covered by the concept.[6] Consequently, especially the older policy documents include lists of sub-sectors included or longer descriptions delineating the domain of creative industries in Finland. For instance:

- Koivunen (2004) lists almost 20 sub-sectors in a report dealing with the promotion and creation of favourable conditions for cultural exports.

- Kaunisharju (2006) identifies 9 creative sub-sectors known for their commercial operations in a study on the development of business activities in creative industries.

- A strategy report on the development of entrepreneurship in the creative industries by 2015 presents a list of 14 creative sub-sectors (KTM 2007).

The latest report also outlines a matrix model describing the interconnections between business activities in the creative industries and other industry and service sectors – i.e. the creative economy. The model has since been used and further refined in a number of policy documents.[7]

[6] There is conceptual ambiguity regarding the two concepts, which have been discussed in length especially in the older reviewed documents. In the case of the creative industries questions abound regarding the areas covered by the concept, as well as comparability of sub-sector activities. The sectors usually listed as creative present disparate domains of activity, follow different logic of action and use different business models and earnings logics – making policy-making a challenging task.

[7] For example, a report prepared by a joint working group of the Ministry of Economic Affairs and Employment on growth and renewal from creativity (2012), the Government resolution on a development programme for intangible value creation 2014-2020 (2014), and the recent report of the working group on recognising the creative sectors as a driver of Finnish economy and employment (2017).

The search for a precise definition of creative industries has shifted to the background as the policy focus has moved away from a sectoral approach to the promotion of cross-sectoral collaboration. Indeed, the promotion of interaction between actors in an innovation-driven economy has been a common theme of policy documents over the past 15 years. The development strategy for entrepreneurship in the creative industries by 2015 (ibid.) envisages cross-sectoral collaboration between companies from the creative and other sectors as an important source of development and creation of new offerings and innovation.

A document jointly prepared by the Ministry of Employment and the Economy and the Ministry of Education and Culture (2011) outlines a way from scattered policies towards a creative economy ecosystem. The given understanding of the creative economy in the document denotes the use and application of the creative sectors' competencies, products and services widely in society and the economy. Creative competencies have significant potential to contribute and improve the competitiveness of the Finnish economy not only in sectors conventionally classified as 'creative' but across the economy (TEM, 2011).

In the same vein, the Government's resolution on a development programme for intangible value creation 2014–2020 notes that creative activity – understood as individuals' ability to create novel ways of working, service concepts, products and brands – characterises not only creative sectors but all kinds of organisations. While intangible value creation (e.g. in forms of R&D and innovation) is internally important in organisations, the resolution highlights that creativity takes place in different settings and often in collaborative arrangements across organisational and sectoral borders.

More recently, the working group led by professor Anne Brunila (2017) did not consider the provision of an exact definition of creative sectors and creative economy as viable, as the boundaries between business sectors are in continuous flux (e.g. due to digitalisation). In the opinion of the working group, the full potential of creativity as a driver of the Finnish economy and competitiveness cannot be realised by promoting only those sectors conventionally understood to be the core of creative activity. Rather, the task calls for *'the efficient utilisation of intellectual capital, which is a driver of current and future economic growth, and creative competence as well as the generation of economic added value across the entire enterprising sector'* (ibid. 16).

1.4. Systemic transition framework

Ecosystem change in the creative economy context can be approached from a systemic perspective as a complex interactive process, an approach that has been highlighted in transition management research (e.g. Geels 2002, 2005, 2010). The systemic transition framework provides a tool to identify factors affecting the potential for change in institutional structures and actor networks over time. Figure 2 illustrates the core of the framework in which there are three analytical levels, from bottom up: 1. Niches, 2. Regimes/systems and 3. Landscape. The niche level refers to so-called protected spaces, often spatially delimited, with flexible actor groups and rules, such as experimentation cultures and temporary collaboration arrangements, which intentionally aim to work as a springboard for variety and the emergence of innovation. The regime or system level describes established "actor networks with well-aligned rules within and between different regimes" (e.g. technological, industrial, market, governmental, and cultural) (Ulli-Beer 2013). The landscape denotes the external

environment and trends, which can bring pressure for change at the regime level but also incentivise experimentation.

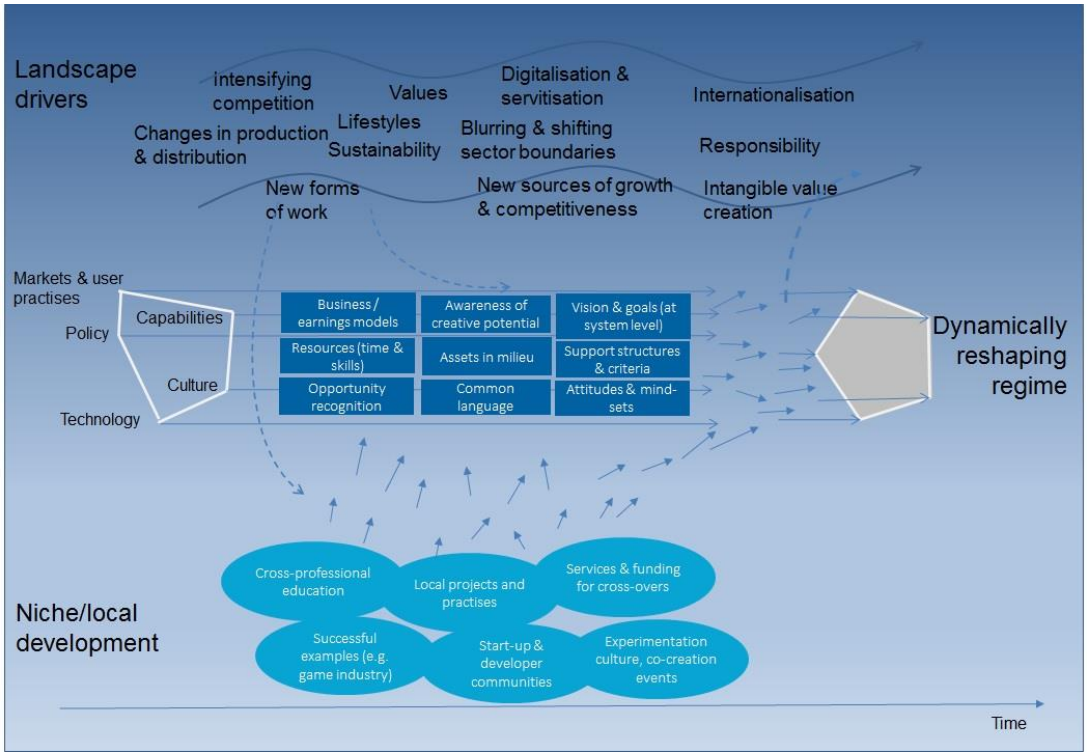


Figure 2. Systemic transition framework for analysing change in the creative field. (Adopted from Geels & Schot, 2007)

2. CREATIVE ECONOMY ECOSYSTEMS AND FACT SHEET UPDATES

2.1. Introduction

How is creative economy defined?

In this study, the term creative economy is understood to include all creative areas of the economy (defined based on the general meaning of creative, i.e. having or showing an ability to make new things or think of new ideas). In essence, creative economy refers both to creative industries and creative work (see the definition provided by Higgs et al, 2008). The creative industries cover a range of economic activity involving the generation or exploitation of different immaterial creative competencies. Thus, it is possible that a creative industry sector has also non-creative jobs and creative work is done also in non-creative sectors.

For the purposes of this study, i.e. aiming to explore the current status of the creative sectors at Finland as well as to recognise future opportunities for growth, we have highlighted the integration of different creative competencies and cross-sectoral collaboration (Figure 3).

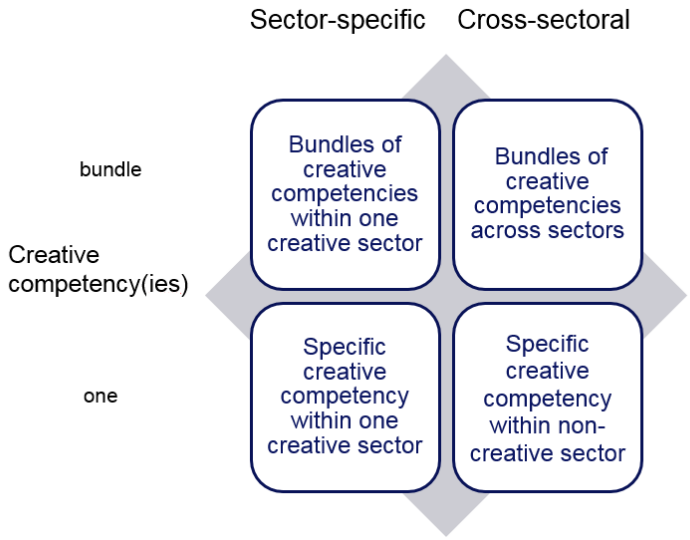


Figure 3. Creative competencies in different sectors[8].

Currently, both the traditional industries and the creative sectors are facing remarkable changes due to global trends such as digitalisation and servitisation (see Figure 2, systemic transition). Due to Finland's high innovation capability, i.e. creativity and skilled work force, future opportunities can be found through cross-sectoral open-minded collaboration. One interviewee even stated that:

[8] Adapted and modified from Higgs et al (2008). See Appendix 1 for the original classification.

'We should get rid of sectoral thinking and the 'innovation mantra'. Instead, in Finland we should focus strongly on understanding intangible customer value when seeking future development paths. We should be able to create products, services and brands that provide excellent customer experience through usability, usefulness, attractiveness, beauty, meaningfulness and responsibility. In other words, we should focus on generating value for customers, users and consumers.'

Finland's economic growth and employment are highly dependent on the success of its export industry. Policy making must therefore consider the international competitiveness of the creative industries and possibilities to build crossovers that integrate novel bundles of both creative and non-creative competencies.

What is an ecosystem?

The ecosystem concept has been actively discussed in management research, bridging, for instance, system thinking and evolutionary economics. Several partially overlapping concepts such as industrial, business, service, platform, innovation, and knowledge ecosystems have been utilised without clearly determining their interconnections. In addition, entrepreneurial ecosystems are also discussed, especially in the entrepreneurship policy literature. As an example, Autio and Levie (2017) have presented a model for collective management of entrepreneurial ecosystems in which policy makers can take a leading role by acting as a steward of the ecosystem and by engaging stakeholders to find ways to mutually coordinate their actions. In order to build future competiveness it is important to understand the logic of action in different types of ecosystem.

Research has typically focused on one ecosystem at a time. However, in real-world systems the interests of the actors (i.e. organisations or individuals), that is, the ecosystem inhabitants, come bundled together with multiple ecosystem parts. In an ecosystem, all actors have their own role to play and, in this way, they view the partially overlapping ecosystems from their own unique perspective. Relationships and interactions between ecosystem types therefore need to be analysed at several levels in order to understand how connections flow between different ecosystems in the real business world. (Valkokari, 2015)

Ecosystems are formed from interaction and interlinkages between actors; in a business ecosystem the linkages are based on aligned business models, in a knowledge ecosystem on shared knowledge interests (Figure 4).

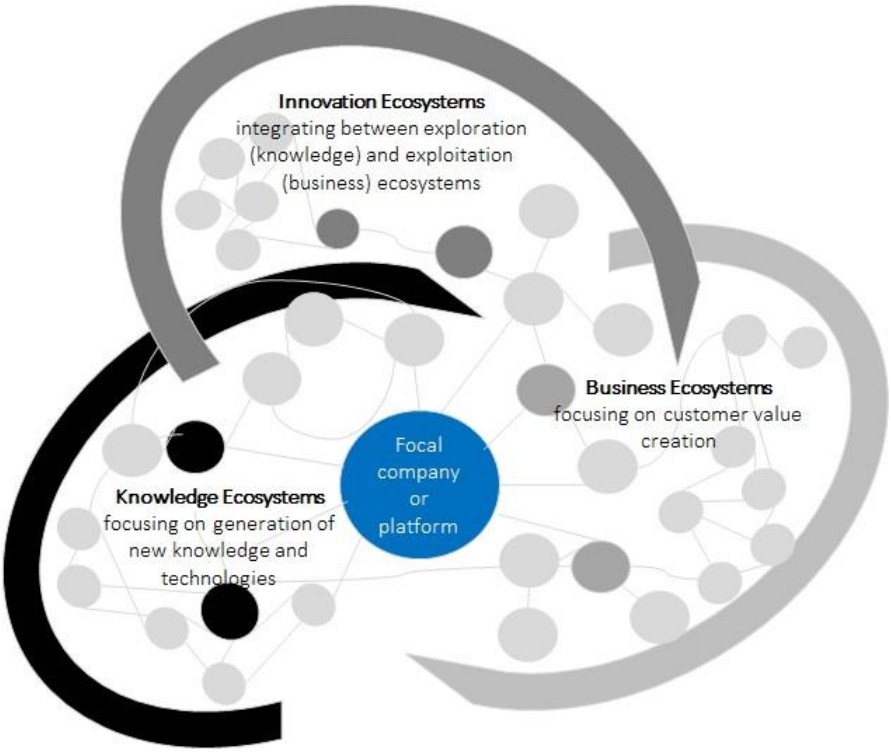


Figure 4.Three ecosystem types and their focus.

The three ecosystem types form a continuous transformation process resembling a multi-level model (see Figure 2, Systemic transition framework). The ecosystem types do not necessarily follow each other one-by-one, i.e. by connecting several knowledge ecosystems an innovation ecosystem can emerge that can again transform into several emerging and existing business ecosystems (Figure 5). In section 2.3, therefore, we have not evaluated only business ecosystems related to creative sectors, but also key actors and actions in knowledge and, especially, innovation ecosystems.

Renewal and growth of the economy requires interaction between the three ecosystem types: knowledge ecosystems exploring new knowledge and future competencies, innovation ecosystems boosting commercialisation and business ecosystems building growth.

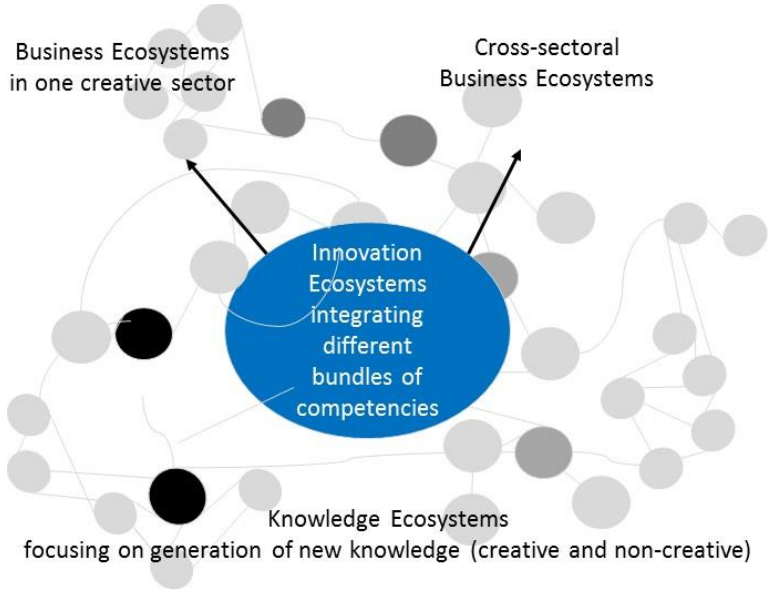


Figure 5. Interconnection between ecosystem types.

Regarding ecosystem development within the creative industries, the importance of vertical and horizontal coordination as well as a shared vision at the national level was mentioned as a key success factor several times during this study. The creative industries are among the most dynamic sectors of the economy and development activities have often been project-based. Creative industry actors stated that continuity and long-term commitment has been at least partly missing at the national level. On the other hand, regional hubs have a strong position in organising creative ecosystem development activities.

Creative competencies and future growth ecosystems

A (creative) ecosystem can be defined as a community of connected, but disparate actors interacting within an environment and between each other. As with any ecosystem, it is a living community of interacting organisms and diversity is key to its health. These interactions involve dependency relationships leading to feedback loops of causality and enabling self-organisation. Creative economy ecosystems can operate around a regional hub or a single sector such as the film industry. Thus, no single ecosystem includes all creative industry actors, ***creative ecosystems overlap with each other and with other sectors*** (in the next chapter the networked value co-creation between creative actors is described using the example of the dance industry).

From the viewpoint of business and future growth, Finnish creative ecosystems have limited resources or capabilities to grow independently. The potential for new growth exists instead in the intersections between creative competencies and other sectors in which Finland has strong know-how.

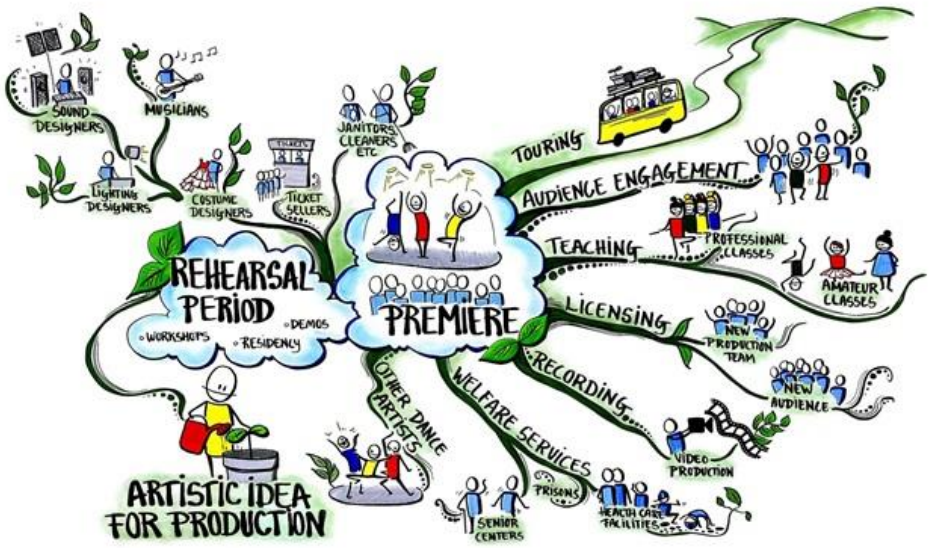
Value creation within the creative industries

Similar to other value creation processes, creative industry value chains start from an initial (creative) idea, which then moves through a series of interlinked and often iterative stages to end customers, i.e. users of the value created. Value creation within the creative sectors typically occurs in networks of several actors with different backgrounds which bundle together due to their limited size[9]. The case example of dance production shown below represents this kind of value co-creation network, i.e. a project-based business ecosystem of artistic dance production, combining the value chain and the related business ecosystem.

Figure 6. Value creation process within the creative sector.

Nowadays, there is a need for collaboration between different actors, and user-driven innovation is strongly emphasised. In other words, value chains are turning into value networks and ecosystems connecting a variety of actors through digital channels. For instance, in the media industry, since the emergence of social media the role of users has changed and end users now play active role in content production and dissemination. Thus, the value chain is undergoing radical restructuring, forcing traditional business models to be reconsidered.

Although the Nordic countries have excellent dance sector infrastructure, the sector mainly comprises micro companies or individual freelance artists. Thus, networks could provide new opportunities for cross-sectoral collaboration, with new digital distribution channels utilised and social media links built between sectors and with the customer.



[9] Siil, Ragnar, Rekola, Sanna & Lindholm, Katariina (Editors); keðja, Sustainability Think Tank Report 2015: Recommendations for a Sustainable Nordic Baltic Dance Field. Erweko Oy. Original picture by Kuvitellen Oy. https://issuu.com/danceinfofinland/docs/recommendations_for_a_sustainable_d

Today's digital distribution channels enable global scalability and connectivity of business models within several categories such as creative and cultural products (music industry), creative content (media) and creative environments (game industries). This scalability enables significant growth through internationalisation of actors and novel networks. However, the competition is also global. In addition, some companies also operating in the third category in creative services such as design, fashion and lifestyle can use digital channels to find their own consumer market niche, build strong relationships with their customers, and boost interaction and community between their customers. These kinds of distributed communities sharing values and interests are an example of changes in consumer behaviour brought about by globalisation and digitalisation.

2.2. Updated information on creative economy ecosystems in Finland

An extensive review of Finland's creative sectors was conducted in 2010 (Fact Sheets Luovat alat), but since its publication significant changes have taken place within the creative fields as well as in the operational environment and market (see section 1.3). Intangible capital and technology enabled trends, particularly digitalisation, have become important drivers of growth and productivity. To support decision-making and policy design for the creative economy, an up-to-date overview of activities, actors and development needs in the creative sectors is required. The growth of the Finnish game industry in recent years provides an illustrative example of the value of intangible capital and creativity for exports and the national economy. Against this background, the objective was to rearrange and update the Fact Sheets covering the creative sectors in Finland. In particular, the aim was to identify the main focus areas of creative competencies that support future competiveness and growth.

Evolution of creative sectors

To gain an overview of the potential for growth in the use of creative competencies, we grouped the creative industries into four main categories (see Table 1): 1) creative and cultural products, 2) creative content, 3) creative services and 4) creative environments and platforms. This categorisation is based on the slightly modified UNCTAD (United Nations Conference on Trade and Development) Creative Economy Network definition of creative sectors with four main areas (heritage, arts, media and functional creations)[10]. In addition, the categorisation into three sectors - scalable products (monistettavat tuotteet), creative services (palveluliiketoiminta), arts and culture (taide- ja kulttuuri)[11]- by the Ministry of Economic Affairs and Employment as well as the framework used by Business Finland[12] have been taken into account in our categorisation.

[10] Through the Creative Economy Network, UNCTAD has proactively facilitated the sharing of knowledge and best practices, forging strategic alliances and networking among governments, creators, the business community and civil society.

[11] Public funding of companies in creative sector (Julkinen rahoitus luovien alojen yrityksissä), downloadable at https://tem.fi/documents/1410877/2864661/Julkinen+rahoitus+luovien+alojen+yrityksiss%C3%A4+17092012.pdf

[12] Wevolve & Finpro (2016). Suomen luova loikka

Table 1. Categorisation of creative sectors.

Creative and cultural products Heritage and arts	Creative content Media	Creative services Functional creations	Creative environments and platforms New media & Games
Crafts Museums, galleries and libraries (Festivals) Music (live + royalts) Performing and visual arts	Film (inc. animation), TV, video, radio and photography; Publishing (inc. music managers) and literature	Advertising and marketing, Architecture, Design: product, graphic and fashion design	IT, software and computer services; Creative places/events Digital games AR/VR

The first category (see Table 1), ***creative and cultural products***, forms the core of the creative sectors, i.e. heritage and arts highlighting uniqueness. The value of this category lies in strengthening cultural heritage and identity building. In the second category, ***creative content***, intangible value can be recycled repeatedly; the category includes the media, film and publishing sectors. The third category, ***creative services***, integrates different branches of advertising, architecture and design in which intangible value is typically generated through an interactive process. Thus, creative competencies are utilised also in different areas of consulting services. This is a significantly growing area with future growth potential – service design, arts and wellness services are examples of these kinds of services. These are not included in the statistics presented in this study as they are typically categorised under management consulting. The fourth sector, ***creative environments and platforms***, further highlights the importance of communities for building and sharing values.

We cross-walked the Finnish creative occupation codes identified by the UK Department for Digital, Culture, Media and Sport – the most referred to international benchmark – with their International Standard Classification of Occupations (ISCO) equivalents. We then compiled estimates of national employment in the creative economy and creative industries, separating out creative and non-creative jobs. Employment microdata from workforce surveys were used to produce the estimates. We then analysed the creative intensity of different industries. Data on key measures of economic performance, such as employment, salaries, turnover and exports were accessed from official Statistics Finland datasets as follows:

- The Finnish Longitudinal Employer–Employee Data (FLEED) merges comprehensive taxation and other administrative records of all labour force members as well as all employers/enterprises subject to value added tax (VAT). FLEED has data on both firms and establishments (such as data about public institutions that is missing from the Business Register database). We use the establishment level in order to study the geographical division of creative and supportive employees within a firm and their respective wage levels. Data on public institutions seems to be of importance for certain industries such as film, TV, video, radio and photography as well as museums, galleries and libraries.
- The Business Register database at the enterprise level covers the annual enterprise-level statistics of enterprises and private non-profit organisations. The data includes basic information about enterprises' industry, location, ownership, turnover, number of employees and wages and salaries.

- The International Trade Statistics describes the commodity trade between Finland and other European Union (EU) Member States and between Finland and third countries, i.e. internal and external trade. International Trade Statistics is the official information source on the importation, exportation and balance of trade of Finland.
- Regarding the several sub-categories of creative economy it should be noted that public sector (municipal) employment is not included. Based on statistics of municipal activities it can estimated that this totals approximately 10,000 employees (including arts education, libraries, museums and galleries, theatres, dance and circus, music and other cultural activities).

Where possible, we use these datasets to produce estimates of employment, salaries and creative intensity for both the national and local levels. A detailed statistical analysis of Finnish creative sectors and the analysis methods used is provided in Appendix 1.

All creative employment in the economy is aimed to be estimated within the method utilised in this study. That is, employment in all creative activities along with creative jobs in non-creative activities. The estimate can be performed by using two classifications (NACE and ISCO) used in the European Labour Force Survey.

Once the aforementioned classifications are filled in, an estimate of creative economy from perspective of employment can be calculated:

Creative employment = creative occupations (creative specialists) + non-creative occupations in creative activities (support creatives) + creative occupations in non-creative activities (embedded creatives).

Creative intensity is specified as the share of creative occupations' employment in each industry.

Table 2 presents the key data of the four categories used in the study.

Table 2. Summary of creative sector categories utilised in this study.

Category	Number of actors	Turnover (1000 €)	Number of creative employees	Creative intensity	Number of exporting firms	Exports (1000 €)
Creative and cultural products	3 954	583 199	4 983	53%[13]	15	23 945
Creative content	2 871	3 663 245	11 223	52%	11	10 173
Creative services	10 071	2 562 860	12 666	64%	1	65
Creative environments and platforms	7 079	8 733 445	26 236	61%	64	37 111
Other[14]	1 432	740 554	438	11%	33	35 980
TOTAL	25 407	16 283 303	55 546	56 %	124	107 274

[13] The average creative intensity percentage is lower than the percentages presented in the creative and cultural products category. This percentage includes the cultural education category (8552), which employs 2179 persons and has a creative intensity of only 31%. Also, most of the employment takes place in the sub-category of "Music, performing and visual arts". In that sub-category, the number of employees in non-creative occupations almost equals the number of employees in creative occupations.

[14] The 'others' category include printing and retail and wholesale of cultural items.

Table 3 represents employment in Finland within the creative industries (including its three main components: specialist, non-specialist and embedded employment) from 2011 to 2015.

Table 3. Creative economy employment in Finland, 2011-2015.

Year	Specialist	Support	Creative industries	Embed-ded	Creative occupa-tions	Creative economy
2011	55 200	42 500	97 800	65 200	120 400	162 900
2012	50 700	44 400	95 200	68 000	118 700	163 100
2013	49 200	40 600	89 900	65 300	114 500	155 100
2014	51 300	39 400	90 800	66 000	117 300	156 700
2015	54 100	36 800	90 900	67 800	121 900	158 700
Average	52 100	40 700	92 900	66 400	118 500	159 300
Share of workforce	2.5%	1.9%	4.4%	3.2%	5.6%	7.6%
Share of creative economy	32.7%	25.5%	58.3%	41.7%	74.4%	100.0%

Fact sheets – how to read

Summaries of the analysis of each sector are presented in the following sub-sections. The summaries include:

1. Summary of the statistical analysis of the creative category from year 2015 (at the sub-category level). Number of actors (both private and public organisations), turnover, number of employees (both creative occupations and non-creative occupations), number of exporting firms and total export volume.
2. Top three Finnish regions ranking based on highest location quotient for the creative industries (Appendix 1, Table 16). In general, the creative economy workforce (in all four categories) is heavily concentrated in the Greater Helsinki area, with the region of Uusimaa accounting for 57 per cent of employment in the creative economy. However, there are regional variations in creative industry concentration. The top three ranking enables comparison of the importance of employment in certain occupations or industries in a region compared with the country as a whole.
3. A case example highlighting emerging areas or special categories.
4. Growth potential based on average annual employment and salary growth rates over the period 2011-2015. The summary shows that the economic recession also hit the creative economy. In many cases, the number of creative industry employees has decreased. However, in general, Creative Specialists managed to do better than Support Creatives. Creative Specialists are those working in creative occupations in creative industries whereas Support Creatives work in a creative industry, but are not themselves employed in a creative occupation.

FACT SHEETS

Creative and cultural products – key figures

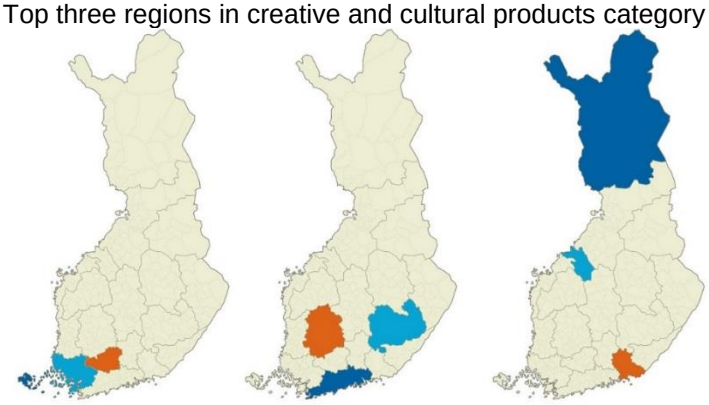
	Number of actors 2015	Turnover (1000 €) 2015	Number of employees 2015*	Total	Number of exporting firms	Exports (1000 €)
Museums and galleries (1)	68	14 868	678/435	1 113 (61%)	1	23
Crafts	342	119 271	323/232	555 (58%)	11	23 489
Music, performing and visual arts (2)	3 544	449 060	3892/2566 **(3)**	9 514 (60%)	3	432
Total	3 954	583 199			15 **(4)**	23 945 k€

*creative / non-creative occupations

(1) Not all museums and galleries are included as some fall under other categories (e.g. 4299, 9499) or are public institutes such as libraries (i.e. employer is a municipality).
(2) Music, performing and visual arts includes Performing arts (9001), Support activities to performing arts (9002) and Artistic creation (9003). Dance, theatre and circus are included to some degree under performing arts. Sound recording and music publishing activities are presented in the creative sector category Creative content.
(3) Cultural education (8552) which employs 2,179 persons (intensity 31%) is not included here as it is not in Finland's official Cultural Statistics. If it is included, the total number of employees is 8,637 (intensity 53%). It is included in the summary figures in Table 2.
(4) Almost all exports in the Creative and cultural products category are produced by one firm operating in the Striking of coins industry (3211). The highest number of exporting firms, eight, is in the Manufacture of jewellery and related articles industry (3212).

Regional significance

Top three regions in creative and cultural products category in terms of location quotient[15]



Crafts: Kanta-Häme, Varsinais-Suomi, Uusimaa

Museums and galleries: Pirkanmaa, Etelä-Savo, Uusimaa

Music, performing and visual arts: Kymenlaakso, Keski-Pohjanmaa, Lappi

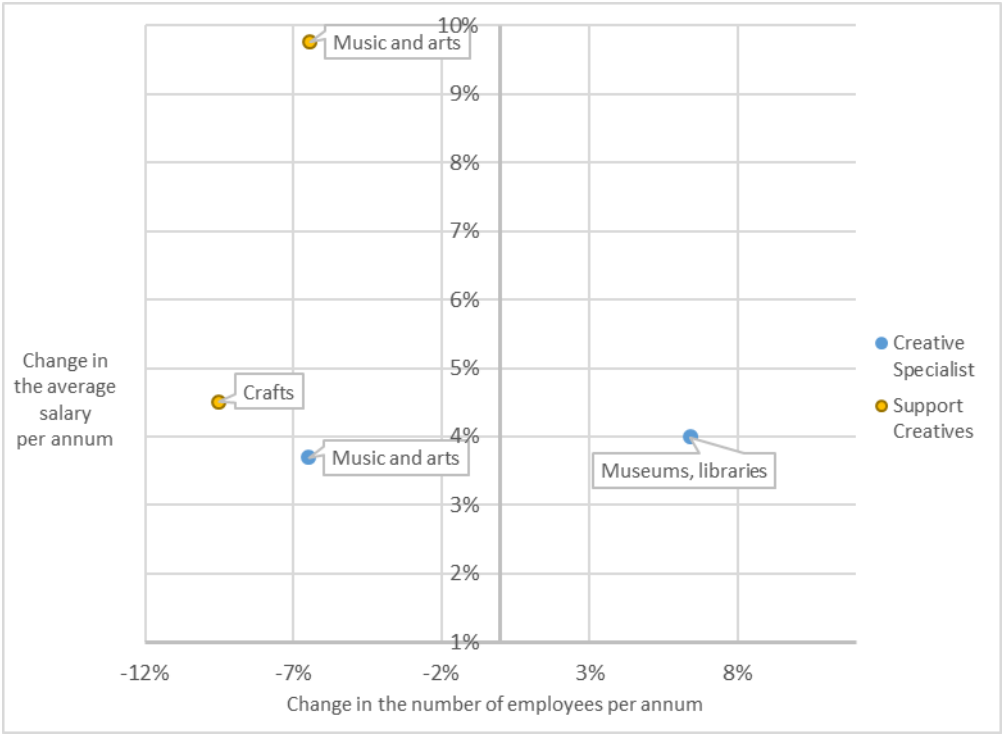
[15] Creative workforce shares can be analysed using location quotients (LQs). These are defined for the creative economy as the creative workforce share of the region (CE_R/WF_R) divided by the creative workforce share of the national workforce (CE_{FI}/WF_{FI}). As such, they allow us to compare how the importance of employment in particular occupations or industries in a region compares with their importance in the country as a whole. An LQ>1 means the regional workforce is more concentrated than the national one, an LQ=1 means that the concentration is the same and an LQ<1 means that it is less concentrated. The highest location quotients of the creative industries presents the importance of employment in particular occupations or industries in a region compared with their importance in the country as a whole (Appendix 1, Table 16). When analysing the results, one must understand that much of the cultural activities are taken care of municipalities directly and the relating creative workforce does not show up the category results. For example, in Museums and galleries sub-category, there are a number of separate legal entities in Etelä-Savo region: their employments are reported under this sub-category whereas in many other regions in Finland that is not the case. Moreover, creative industry occupation is not high in Etelä-Savo in general, which further highlights Museums and galleries sub-category's relevance for the region.

Case-example of cross-sectoral collaboration

The Oulu information and communications technology boom is being highlighted at the Printocent exhibition at the Oulu Museum of Arts as part of the Hype in the Arctic Silicon Valley programme. The new exhibition produced by the Museum and Science Centre Luuppi combines research data, fictional narrative, hands-on activities and visuality by telling a fictional story of inventor-engineer Toivo Ruokko and his Raakku device. (https://www.ouka.fi/oulu/luuppi-english/hype)

Setting up this exhibition has brought together technology entrepreneurs and creative sector actors. One entrepreneur has driven the idea forward and discussed with the representative of the City of Oulu opportunities to bring visibility to Oulu, for example by organising an installation at the Oulu Light festival, and stated that such cross-sectoral collaboration with creative professionals opens up new ways to promote different competencies. This is one example of how innovation centres such as Printocent and cities as innovation platforms can serve as places of innovation for the Creative Industry.

Future growth and competencies[16]



The changes (decrease in personnel and/or salaries in several cases) between 2011 and 2015 have been rather significant. For instance, support personnel (not included in this figure) diminished by 23%.

16 Figure shows the average annual employment and salary growth rates over the period 2011-2015.

Creative content – key figures

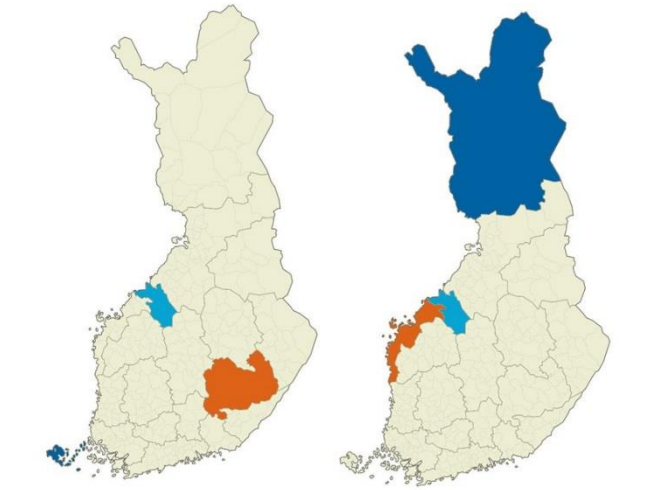
	Number of actors 2015	Turnover (€) 2015	Number of employees 2015*	Total number of employees and intensity	Number of exporting firms	Exports (1000 €)
Film, TV, video, radio and photography (1)	1 765	1 190 844	5760/2599	8 359 (69%)	6	8 341
Publishing (2)	1 106	2 472 401	5463/7898	13 361 (41%)	5	1 832
Total	2 871	3 663 245	11 223/10 497	21 720 (52%)	11 (3)	10 173

*creative / non-creative occupations

(1) Television programming and broadcasting activities (6020) employs altogether 4 300 persons, a public institution employs over 89% of employees of these.
(2) Publishing of newspapers employs 7,508 persons (48% of total), but its creative intensity is limited at 39%. Translation and interpretation are included in this sector.
(3) Exports within the creative content category are widely distributed among eleven firms with no single firm in dominance.

Regional significance

Top three regions per creative content category in terms of location quotient[17]



Publishing:
Etelä-Savo, Keski-Pohjanmaa, Ahvenanmaa - Åland

TV and radio:
Pohjanmaa, Keski-Pohjanmaa, Lappi

[17] The highest location quotients of the creative industries presents the importance of employment in particular occupations or industries in a region compared with their importance in the country as a whole (Appendix 1, Table 16).

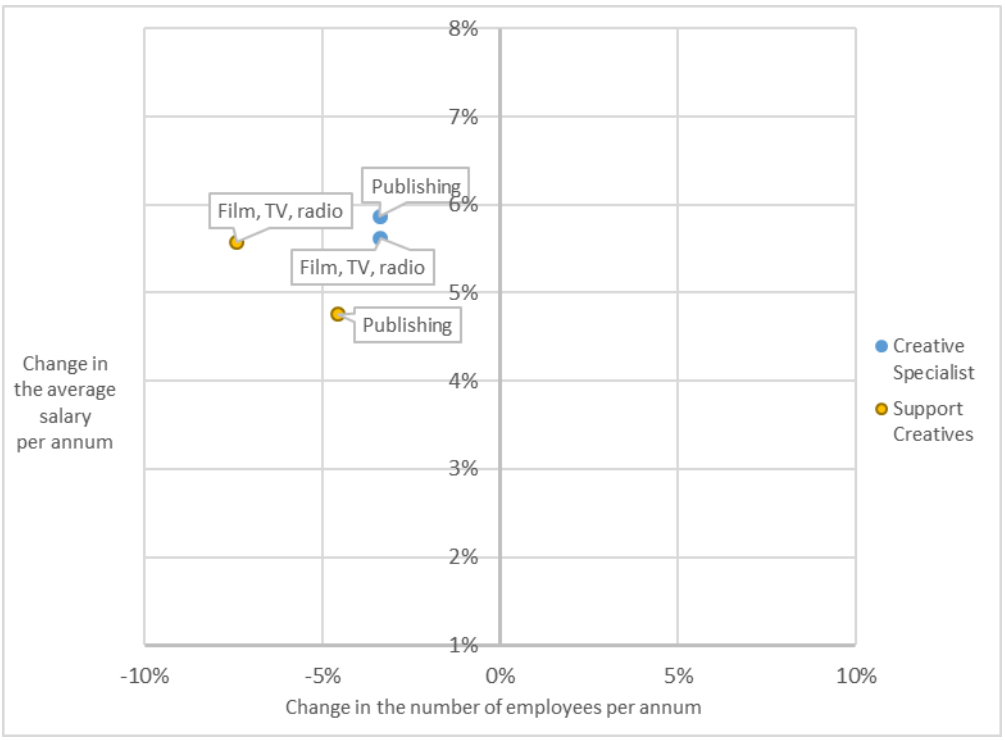
Case-example of digital disruptions challenging the media industry

Digital disruption of the media sector is a broadly discussed example of system-level transformation affecting the business models of all of key actors, i.e. advertisers and marketers, publishing companies (content providers), printing and distribution companies and end users (either consumers or business users). All actors have had to re-think their current value flows, as well as their partnerships with customers and suppliers. Furthermore, media convergence reflects the blurring boundaries between the media, telecommunications and information technology sectors – and the emergence of new actors, such as technology and service providers. Within this change, the focus of the media ecosystem should be on end users' contexts and purposes rather than on channels and sites in order to be able to offer novel value to both end users (consumers, B-to-B media users) as well as to advertisers and marketers.

The media ecosystem is transforming towards a platform-centric ecosystem, where digital technologies are connecting content users, providers and advertisers together in a new, more collaborative way. In such platform ecosystems users may also be producers of user-generated content (UGC) as, e.g., the rise of the blogging and vlogging phenomenon shows. This has affected publishing companies and created the need to provide content for all possible channels.

Different possibilities for monetisation are emerging through licensing, selling user data or business intelligence information or offering the platform as a service concept (PaaS). Social media companies have emerged as the main competitors of traditional media companies in both advertising and consumer coverage, as they offer their content (gathered from different sources) for free and offer a vast consumer base. Decisions regarding new monetising models may be difficult to make and require agility and changes in thinking. Creativity is therefore now valued more than ever and media ecosystem actors should be looking to embed creativity into their core strengths such as quality of content and brand.

Future growth and competencies[18]



[18] Figure shows the average annual employment and salary growth rates over the period 2011-2015.

Creative services – key figures

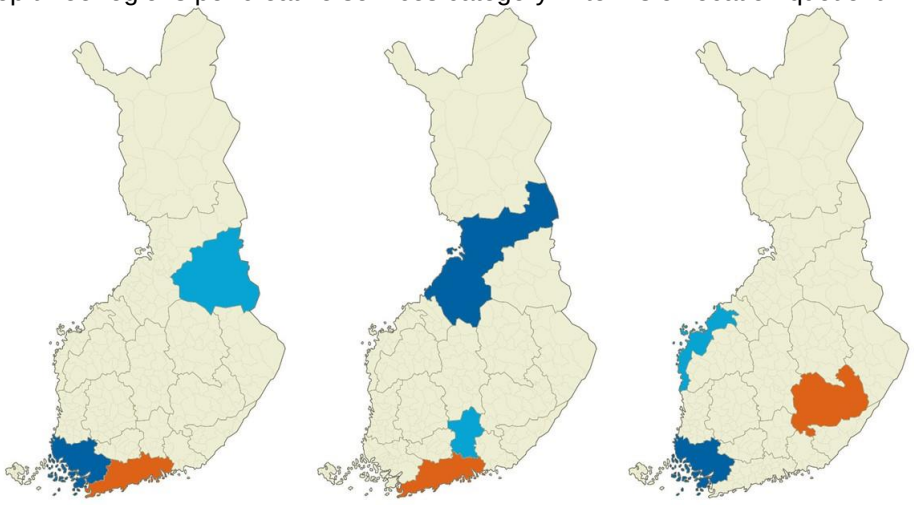
	Number of actors 2015	Turnover (€) 2015	Number of employees 2015*	Total number of employees and intensity	Number of exporting firms	Exports (1000 €)
Architecture	1 407	388 462	2 663/990	3 653 (73%)	0	0
Advertising and marketing	4 142	1 697 411	5270/ 5017	10 287 (51%)	1	65
Design (product, graphic and fashion design) (1)	4 522	476 987	4 733/1 144	5 877 (81%)	0	0
Total	10 071	2 562 860	12 666/7 151	19 817 (64%)	1 **(2)**	65

*creative / non-creative occupations

(1) Service design not included.
(2) There is almost no export activity within the creative services category. Architecture exports are included to some degree in the construction industry and design in the export of designed products.

Regional significance

Top three regions per creative services category in terms of location quotient[19]



Advertising and marketing: Uusimaa, Kainuu, Varsinais-Suomi

Architecture: Uusimaa, Päijät-Häme, Pohjois-Pohjanmaa

Design: Etelä-Savo, Pohjanmaa, Varsinais-Suomi

[19] The highest location quotients of the creative industries presents the importance of employment in particular occupations or industries in a region compared with their importance in the country as a whole (Appendix 1, Table 16).

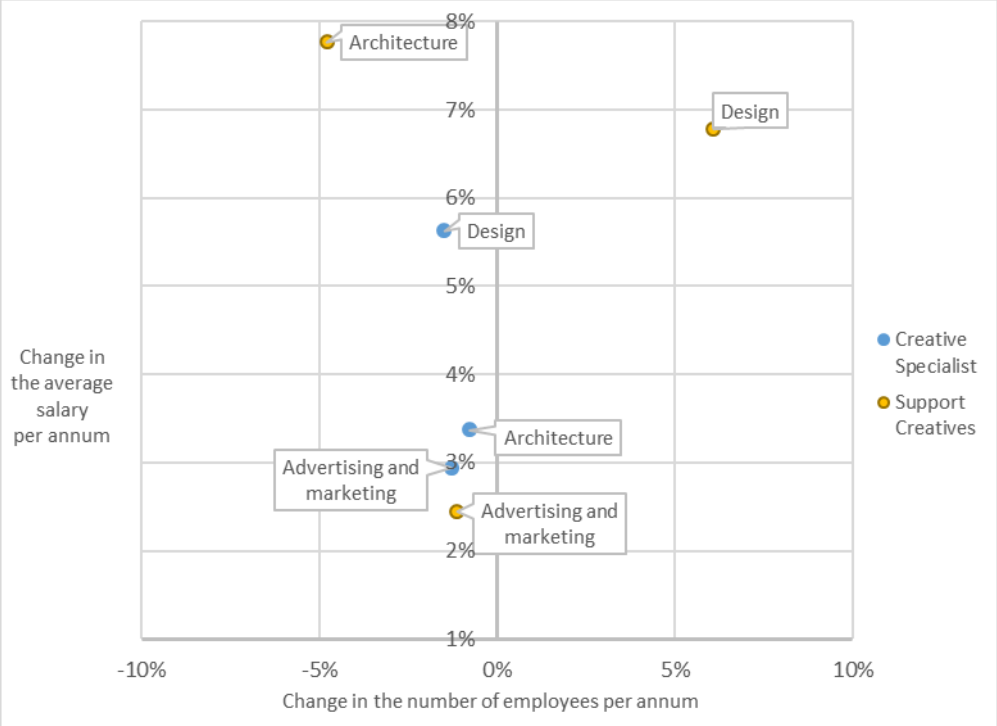
Case-example of how service design supports the renewal of an industrial company

Design is, as its best, a good tool for renewal and building competiveness: with it, profound understanding of the operational environment can be gained, and large, complex problems swiftly conceived and concretized. The current new wave of design, such as the service design approach, aims to create meaning and success in the changing world.

Leading elevator and escalator manufacturer Kone has historically been known worldwide for its products, although the company's goal of providing excellent service to customers has been part of its core mission from the start. What has changed is that Kone's customers are increasingly looking for a partner who can help them through all stages of their product's lifecycle. For Kone, this means providing its customers with flexible and attentive maintenance services, and being able to think about how modernisation and upgrades can improve its customers' lives and the ways in which they can use their equipment. Service design has in this way brought the user to the core of development and emphasised the importance of customer experience.

(http://www.kone.com/en/stories-and-references/stories/design-in-its-truest-form.aspx)

Future growth and competencies[20]



Design belongs to the few growing sub-categories showing an increase in average salary of both creative specialists and support creatives between 2011 and 2015. The number of support creatives has also increased indicating a growing demand for creative competencies.

[20] Figure shows the average annual employment and salary growth rates over the period 2011-2015.

Creative environments and platforms – key figures

Creative environments and platforms	Number of actors 2015	Turnover (1000 €) 2015	Number of employees* 2015	Total number of employees and intensity	Number of exporting firms (1)	Exports (1000 €)
IT, software and computer services	5 845	8 290 325	25 326/14 689	40 051 (63%)	62	37 010
- **Computer programming activities (6201)**	3 811	6 388 087	19 654/ 10 121	29 775 (66%)	49	28 100
Creative environments	1 234	443 120	874/2 393	3 267	2	101
Total	7 079	8 733 445	26 236/17 082	43 318 (61%)	64 (2)	37 111

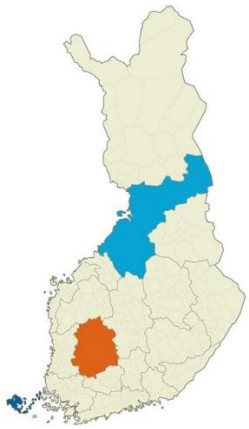
*creative / non-creative occupations

(1) It is very difficult to estimate the exports of the gaming industry companies. In most case the players purchase services directly in the gaming platform, and these are shown in the company's turnover. For statistical purposes, it is recommended that this turnover were shown as royalty income but for many companies this seems not to be the case. Neogames Finland, Hub of the Finnish Game Industry states there are ca. 260 gaming industry companies in Finland. The combined turnover of these companies was about 2,3 and 2,4 Mrd euros in 2017 and 2016, respectively. One company, Supercell, called for about 80% of this combined turnover. We can expect that over 90% of the industry's turnover comes from abroad.

(2) Within the creative environments and platforms category, the highest number of exporting firms is in Computer programming activities (6201) in which 49 exporting firms account for a total export revenue of EUR 28.1 million. In Computer consultancy activities (6202) 8 exporting firms account for a total export revenue of EUR 6.2 million. It is noteworthy that there were no exporting firms in the Publishing of computer games (5821) sector in 2015. Most of the gaming industry companies list themselves under the aforementioned Computer programming activities.

Regional significance

Top three regions of creative environments and platforms category in terms of location quotient[21]



IT and software:
Pirkanmaa, Pohjois-Pohjanmaa, Ahvenanmaa - Åland

[21] The highest location quotients of the creative industries presents the importance of employment in particular occupations or industries in a region compared with their importance in the country as a whole (Appendix 1, Table 16). Note: The highest location quotients do not present all perspectives of regional strengths. For instance, Uusimaa is not in the top three in this location quotient comparison, although Helsinki based game company Supercell was the biggest taxpayer (tax year 2014).

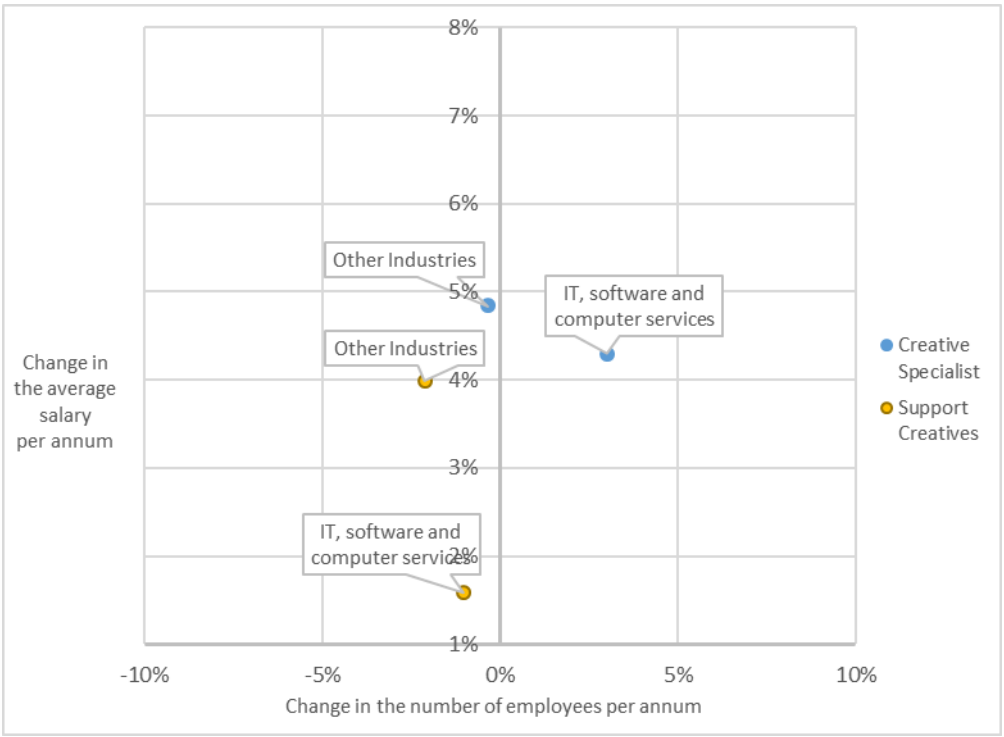
Case example – game companies are born global

Critical Force is an illustrative example of the growth of a game industry company from start-up to a company employing over 50 people. In 2016 Critical Force received 4 M€ funding from a South Korean company, NHN Entertainment (3500 employees). A small agent company played a central role in finding the partner, although the company's own office in Thailand (three employees) had strengthened its position in the Asian market. The Thailand office was originally established because three employees wanted to work there after their student exchange period. This illustrates how employee work satisfaction is appreciated and responsibility shared in the company.

The roots of the company are in the University of Applied Sciences of Kajaani, where the entrepreneur worked as a teacher of coding in the early 2000s and spearheaded the establishment of a gaming education programme in 2005-2006, following a long career of more than 18 years as a software developer in Finland and in Germany.

https://kauppapolitiikka.fi/yritykset/critical-force-kun-kajaani-kohtasi-korean/
https://www.oulunkauppakamari.fi/?id=36&news_id=165&archive=
https://www.talouselama.fi/uutiset/peliyhtion-rankat-opit-veli-pekka-piirainen-joutui-siirtamaan-tarkean-tyotoverin-sivuun-olisi-pitanyt-kayttaa-kontrollia-enemman/044f00ff-14ca-36af-8e00-e639b5899cda

Future growth and competencies[22]



[22] Figure shows the average annual employment and salary growth rates over the period 2011-2015.

2.3. Stakeholder insights on creative economy opportunities and challenges

The insights of creative economy opportunities and challenges in Finland were collected from variety of experts and stakeholders using different interaction channels (workshop, in-depth interviews and VTT's online co-development tool Owela). The participants and the interviewees came from the Ministry of Education and Culture (OKM), the Ministry of Economic Affairs and Employment (TEM), educational institutions, branch-specific promoter organisations, branch organisations, Business Finland, cities and venture capitalists (listed in Appendixes 3 and 4)..

At the category level, the main needs can be summarised as follows:

- **Creative and cultural products**: Need for marketing, sales and business competencies and/or mediators for largely domestic markets.
- **Creative content**: Need for distribution channels and marketing content for international markets.
- **Creative services** & **Creative environments and platforms**: Contacts, networks and funding for growth and internationalisation.

The creative economy opportunities (and challenges) identified are illustrated in Figure 7 below and addressed in more detail in Appendix 2.

Figure 7. Creative economy opportunities based on stakeholder insights.

Key findings on creative sectors in Finland

Table 4 summarises the qualitative analyses of the weaknesses and strengths of the four main categories of creative industry. As the export and turnover figures in the previous section (Fact Sheets) show, growth in recent years is very much limited to the 'creative environments and platforms' category (specifically the software and game industry sectors).

In the first category, creative and cultural products, digitalisation has changed the distribution channels of the music business. There are also some actors with strong global positions within their own niche market segment or certain value chain positions (such as music publishing/digital production). Most others act mainly nationally with limited resources and potential for growth and globalisation.

Table 4. Four main categories – weaknesses and strengths.

Category	Weaknesses	Strengths
Creative and cultural products **Heritage and arts** **Antique and art dealers** **(Visual) Arts and Galleries** **Crafts** **Music** **Dance** **Theatre and circus**	Polarised market Limited development of the visual arts market (domestic) Handicraft companies small and entrepreneurial-driven Export of music concerts remains Lack of professional producers and managers of dance / lack of networks Financial resources of theatres very scarce / little development / mutual competition	Growing interest in antiques / 'retro' as a working object New business models / rental & digital channels have increased interest / new users / internationally high-quality education in Finland enables use of visual art skills in other areas (games) Handicraft as a part of cultural heritage / interest in self-making Scalability and digitality of music / strong niche communities / music publishing competence Modern dance as a pioneer in light and sound design / international attention Importance to regional well-being and communality (Visual and performing arts)
Creative content **Media** **Animation** **Film** **Literature** **Television** **Publishing**	Animation narrowly understood as a genre for children Small size is a barrier to internationalisation of Finnish film producers Minimal literary exports (marketing / brand building) (only a few big publishers and scarce number of authors) Mass communication has been challenged by social media Television watching is in transition, streaming services	Strong Finnish know-how in computer animation (especially for the games industry) Finnish 'niche' film production, with its own international audience is opening up to the wider public (when new distribution channels are utilised) Digital distribution channels create new opportunities for literary dissemination and co-writing (creative commons licenses, etc.)

	require a new kind of target group-based marketing / interaction Consumers have shifted to the Web and advertisers have followed. Newspaper and many magazine readerships are in decline. Traditional revenue streams do not work on the Web	Some breakthroughs have been achieved in the international TV format markets Many publishers have started to gain revenues from digital content. Based on experiences with digital music, consumers are willing to accept moderate monthly fees. Responsible journalism is gaining more appreciation
Creative services **Functional creations** **Architecture** **Marketing communications** **Design**	Conflicting interests between the construction industry and architecture slows the internationalisation and creation of new concepts Market intelligence and broader media structures have changed with digitalisation / players are looking for new business models / large market share of international market players International orientation and lack of networks limit the design to the domestic market / use of design expertise is not integrated to the strategic level thinking in other industries	Architecture is an attractive and interesting subject / passionate attitude of actors Demand for communication and communication expert services is growing as data volume and distribution channels exponentially increase, new ways of interacting are required for stakeholder communication Design is a recognised component of business competiveness, e.g. service design is considered a key competitive edge builder Individual designers are gaining experience through exporting their own niche productions (for instance in fashion)
Creative environments and platforms **Software/Digital games**	Businesses remain small; ownership is sold to international players / credibility and attractiveness is limited, which may lead to slowdown of growth, as witnessed in 2016 when growth fell to 4% (https://www.neogames.fi/fgir2016/)	Technology know-how is top quality and international reputation is good / community and network effects help new companies towards international break through

Table 5 summarises the key characteristics of each ecosystem type (knowledge, innovation and business, see Figure 4) and the challenges and strengths of the Finnish creative sector.

Table 5. Ecosystem phases, strengths and weaknesses (challenges) of the Finnish creative sectors.

	Knowledge	**Innovation**	**Business**
Characteristics	Decentralised knowledge nodes, synergies through knowledge exchange	Geographically clustered actors, innovation platforms, different levels of collaboration and openness	Global business relationships both competitive and cooperative

Challenges of Finnish creative Industry	Education happens in 'silos' and has limited contact points with innovation activities Career paths are unclear and/or mixed	Project-based funding of regional hubs and integrators, limited continuity and national vision missing In some sectors creative actors are working alone (own brand development hinders networking) Funding difficult to secure in the scale-up phase	Limited number of core companies and globally small size (insufficient resources to boost internationalisation and networking with other companies)
Strengths of Finnish creative industry	Institutes of Applied Science (AMKs) have strong regional position as facilitators of knowledge base and activities They and Universities provide multidisciplinary activities internally and with companies	Cities as innovation platforms form networks connecting different actors also at the international (European level): 'Tested/made with the City' Creative methods could support transformation also in other sectors (service design as an example of conceptual thinking utilising creativeness) Start-up funding possibilities have grown rapidly	Game industry as a success story of global competitiveness Open possibilities also for other companies with digital, scalable business models (networked born globals)

2.4. Cross-sectoral collaboration in publicly funded projects

We conducted a small case assessment of cross-sectoral collaboration patterns within the framework of three policy instruments that either specifically target creative sector actors or are recognised as potential sources of support for them. The following three instruments were selected for analysis:

- CreMa funding which is granted for product and service development projects promoting the transfer of expertise from creative industries to other industries and vice versa. The funding originates from the national lottery proceeds of the Ministry of Education and Culture and is distributed by The Promotion Centre for Audiovisual Culture (AVEK) to applicants from creative industries.
- ESF (European Social Fund) 2014-2017 'Luovaa osaamista' ('Creative expertise') action programme projects.
- Business Finland's Innovation Voucher which is intended for small and medium sized companies engaged in well-established business that need external expertise in the form of knowledge and skills to further their innovation activities.

Our assessment of collaboration in publicly-funded projects sheds light on industries with which creative sector actors team up and the availability of policy-relevant data on collaboration. Thus, the findings give some indication of sectors in which there is an identified demand for creative skills and expertise. In addition, the results signal in which areas creative sector actors see potential for collaboration and expertise complementing their development efforts.

Next, we present the main findings of the assessment of cross-sectoral collaboration in the three publicly-funded instruments.

CreMa, coordinated by AVEK, 2012-2017

Methodology: For the years 2012 and 2014 information on collaboration was available in ex-post funding descriptions, whereas for 2015-2017 information was scarce due to access to funding decisions only. Funding information was not consistent for the studied period.

Criteria: selection of projects that contained information on collaboration partners, i.e. name of collaboration partner and/or field of collaborator.

Results: Total 39 projects (out of 91 project decisions) included the above information. In these projects, information on collaboration was available for 58 partners. The majority of these projects (67%) involved a single collaboration partner.

The collaboration partners belonged to the following creative areas and traditional industries:

Creative and cultural products (heritage and arts)	Tourism, 16%
	Productions & events, 12%
	Performing arts, 3%
Creative content (media)	Communication, 3%
Creative services (functional creations)	Design services, 3%
Creative environments and platforms (new media, games)	Digitalisation, 14%
Traditional industries	Construction, 10%
	Metal & manufacturing, 9%
	Forest sector, 3%
Public services	Social-health services, 9%
	Education, 3%
	Public services, 2%
B-to-C services	Other services, 12%

In the CreMa projects, collaboration with the tourism sector (16%) and software (14%) were the prime areas that emerged from the assessment. In traditional areas, collaboration with different kinds of retailers (other services 12%), the construction sector (10%) and the social and health services (9%) were frequent. Links to traditional sectors, such as construction, are due to the inclusion of architecture services and the creative design of construction materials. In public services, creative competencies have been applied especially in art and

culture for wellbeing type of activities in social and health sector with aim to promote health and social welfare and strengthen social inclusion by combining for example arts in elderly care and child care.

ESF (European Social Fund), 2014-2017. 'Luovaa osaamista' ('Creative expertise) action programme[23]

Methodology: Consistent project descriptions were available for the studied period. The 'Luovaa osaamista' ('Creative expertise') action programme is largely centralised at universities of applied sciences and in collaboration between them or other education institutions.

Criteria: selection of projects that contained information on collaboration partners, i.e. name of collaboration partner and/or field of collaborator.

Results: Total 14 projects (out of 19) included information about collaboration partners. In these projects information was available on 55 collaboration partners. Compared to CreMa funding, the ESF-funded projects involve slightly more collaboration as the majority of projects (57%) had established collaboration with two to four partners, and 29% with five or more partners. Furthermore, it is worth noting that many of the projects were ongoing at the time of assessment.

The collaboration partners belonged to the following fields (see Figure 8).

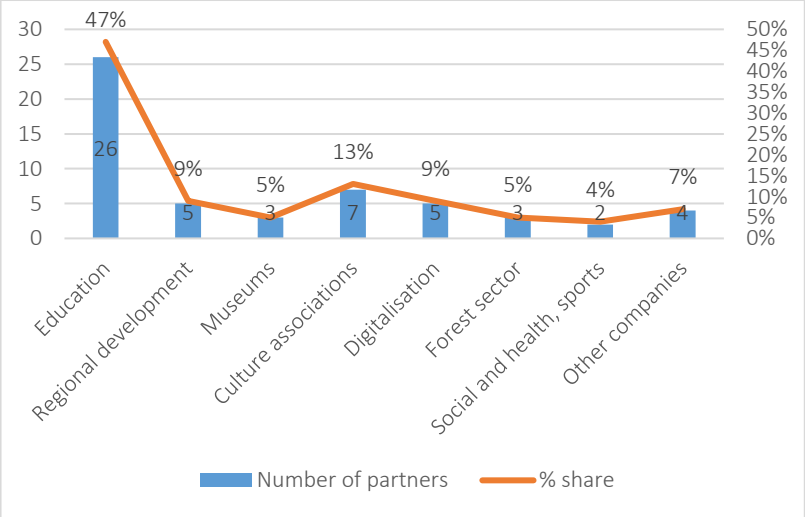


Figure 8. Collaboration partners' fields.

The ESF funding through the 'Luovaa osaamista' ('Creative expertise') action programme aimed to increase collaboration with education actors, which is reflected in the large number of collaboration partners coming from this sector (47%). Although the projects mainly involve education partners, the educational institutes represent different sectors (such as health, business, bioeconomy, software etc.). For this reason, we cannot talk about a strong cross-sectoral industry but cross-sectoral educational collaboration. Within the EFS projects, it is

[23] ESF projects for 2014-2016 have been more thoroughly evaluated in 'Luovan osaamisen ja nuorten osallisuuden alueellinen vahvistaminen: alueelliset rakennerahastohankkeet 2014–2016' by Kirsi Siltanen, Taideyliopisto, 2017.

more beneficial to assess which areas these projects were concentrated on. The majority of projects (29%) focused on digitalisation (incl., games, software, virtual reality, digital media) and 21% on social and health services. However, as the table above reveals, these projects did not include many industry partners, or the information on industry partners was not explicit in the evaluated project descriptions. Furthermore, several projects (21%) focussed on the development of creative industry competence without a specific industry focus.

Business Finland Innovation Voucher[24]

Methodology: Innovation Voucher data for October 2016 - May 2018 was used in the analysis. During the period, a total of 5,447 applications for the innovation voucher were received and 2,875 projects were granted.

Criteria: Collaboration in the Innovation Voucher funded projects was analysed by reviewing the sectoral distribution of the projects in which creative sector companies were involved either as a voucher applicant or a service provider.

Results: The data on the granted vouchers shows that companies use the voucher to acquire a variety of skills. Thematically, the funded projects spread fairly evenly across intellectual property rights (IPR) and patenting (18%), product development (16%), service design and development (15%) market and customer assessment (13%), prototyping and piloting (12%), and others (16%). From the creative sectors' perspective IPR, product development, service design and development, and industrial design are closely linked with these areas.

Companies presenting creative sectors have been involved as service providers in 369 projects, which is 12.8% of all innovation voucher funded projects. The share is twice as high if companies classified in information and communication are included in the creative sectors. Creative sectors companies have also applied the voucher 351 times (6.4% of all the applications) to purchase external expertise.[25]

Based on feedback from actors in creative sectors, the innovation voucher is a highly important funding instrument for very small companies in enabling them to engage in rapid experiments, agile product development and intellectual property protection. The innovation voucher projects have also significantly increased cross-sectoral collaboration and provided an opportunity to display the added value of creative solutions in the development of competitive new products and services. The creative sectors' expertise has been utilised for instance in the development of medical products and services, design of services, preparation of visual assembly instructions and visual appendices of patent applications and furthered the design of visual and functional elements, user interfaces and usability as well as the creation of scripts, stories and conceptualisation for games and tourism services. In general, it seems that the innovation voucher has contributed to collaboration between companies and increased use of the knowledge residing in research centres, universities and universities of applied sciences. This has had a positive impact on the business competency of the creative sector companies.

[24] Information on the Innovation Voucher is provided by Business Finland.

[25] 35 percent of all innovation voucher applications are rejected. Functionalities of the project database in use at Business Finland does not make it possible to get precise approval and rejection rate for the innovation voucher applications made by creative sectors companies. Based on his experience of handling applications, Risto Lustila, product manager of the innovation voucher instrument assesses that rejection rate is lower than average for applications involving creative sectors companies as an application or a service provider.

3. INTERNATIONAL BENCHMARKING

3.1. Introduction

Just as the creative economy stretches beyond the conventional creative sectors, creative competence can be utilised in other sectors to increase their competitiveness. To this end, it is important to come up with arrangements that promote cross-sector collaboration in order to harness the potential of intangible capital and to creative competencies across the economy. **For that purpose, we compared and benchmarked a selection of key international models and arrangements to advance cross-sector development in the creative economy**.

The UK, the Netherlands and South Korea are considered among the forerunners in design and implementation of creative economy policies. Our aim was to benchmark models and policies used in these three countries to promote creative economy ecosystem development. The focus was on models and policies that aim to bring together actors from different sectors and to nurture and advance co-creation and cross-sectorial activities, thus supporting new value creation. The choice of target countries for benchmarking was aimed at maximising the benefit of international experiences in support of Finnish policy design/making in the area of creative economy and ecosystems. The Netherlands, South Korea and the UK have been successful in exporting creative contents. They have also adopted new approaches and policies that can serve as a lesson for Finland (OKM, 2017).

It is important to emphasise that there is no uniform view of how creative industries are defined and institutionalised at the country level. For example, Berg and Hassink (2014) identified that creative industries are interpreted differently in Europe and East Asia. In Europe, creative industries are often divided into two categories: ‘core’ creative industries (arts-related activities) and ‘partially’ creative industries (advertising, architecture, design, and media industries), whereas in Asian countries creative industries is defined in a more inclusive manner aggregating, for example, activities such as hairdressing, theme parks and furniture manufacturing, as seen in China. Sweden, whose approach is leaned towards the ‘experience economy’, includes the restaurant industry along with its creative industries, while India includes in its definition lifestyle products and services such as yoga and ayurvedic medicine. International agencies have also adopted the idea of the creative industries or the creative economy, led by the United Nations Conference on Trade and Development (UNCTAD) (Bop Consulting, 2010).

Governance arrangements may also vary depending on the context. For example, in Japan, the Ministry of Education, Culture, Sports, Science, and Technology is in charge of cultural art promotion, and the Ministry of Economy in charge of creative industry policy. In Germany, France, the Netherlands and Italy, the Ministry of Culture provides the main policies on creative industries (Berg & Hassink, 2014).

Berg and Hassink (2014:657-8) identified four common mutually related characteristics of creative industries, some of which also refer to creativity in the manufacturing industries:

1. Creative industries are deeply involved in the process of new value creation, as their value-added works derive from innovation and they provide various innovation services direct to the consumer market, therefore having a pivotal role in the socio-economic process of adoption and retention of new ideas;
2. Most creative products (e.g. film and television drama) require very diverse and specialised skills and knowledge and are therefore highly concentrated in specific locations;
3. Creative industries benefit from both agglomeration economies (a shared specialised labour market, knowledge spillovers, sustained relationships between individuals and firms, and institutional thickness) and urbanisation economies (geographical proximity facilitates the creative recombination of knowledge, ideas and technologies, which is a source of innovation), although the tendency to concentrate differs from sector to sector;
4. Creative industries affect and are affected by the institutional infrastructure and governance structures at several spatial levels, since they engage with a range of institutional frameworks, such as economic development, local regeneration and social inclusion (a two-way impact).

An overview of the creative economy in each of the benchmarking countries is presented below, followed by a summary of the main lessons learned from the cases as good practices for Finland.

3.2. The United Kingdom

The UK has a long and indisputably rich history of arts and culture. It is also seen as a major reference for benchmarking due to its recognition of creative industries as an economic sector following a mapping exercise conducted at the end of the 1990s, and the majority of efforts towards systematising the sector in other countries refer to the original work of the UK Department for Culture, Media and Sport (DCMS) published in 1998.

The term creative industries was popularised in 1997-1998 under the Labour government led by Prime Minister Tony Blair, and with the publication of Creative Britain in 1998 by Chris Smith, then Secretary of State for Culture, Media and Sport, and the first mapping of the creative economies in 1998. The mapping of creative industries in the UK has been since re-evaluated and updated in the works of NESTA, for example. Smith called for the popularisation of access to arts and bringing the creative industries' contribution to society and the economy to the political agenda (Smith, 2013). Further developments in the establishment of organisational and institutional support for creative industry development have also helped shape the policy process.

An overview of the economic growth of creative industries in the UK is shown in Table 6. Statistics from the DCMS (2017) show that between 2010 and 2016, the creative industries sub-sectors grew their economic contribution by 44.8 per cent. Much of the growth thought to be coming from the field of createch, in which technology is used to enable creativity, and vice versa. Within the creative industries, for instance, the category for information technologies, software and computer services grew by 11.4 per cent in 2016, spurring hope that emerging fields, such as virtual/immersive technologies, augmented reality and artificial intelligence to spur further innovation and growth.

Table 6. Gross value added (GVA) expressed in current prices (£ million), for Creative Industries sub-sectors in UK, for 2010-2016. (DCSM, 2017)

Sub-sector	2010	2011	2012	2013	2014	2015	2016 (p)	% change 2015 - 2016	% change 2010 - 2016	*% of UK GVA 2016*
Advertising and marketing	6 216	6 753	7 799	9 256	10 758	11 758	12 312	*4,7*	*98,1*	*0,7*
Architecture	2 297	2 857	3 040	3 007	3 527	4 025	4 203	*4,4*	*83,0*	*0,2*
Crafts	292	308	284	216	396	368	421	*14,6*	*44,3*	*0,0*
Design and designer fashion	1 968	2 293	2 534	2 705	2 634	3 185	3 537	*11,0*	*79,7*	*0,2*
Film, TV, video, radio and photography	12 793	13 261	13 685	13 763	14 606	14 406	15 361	*6,6*	*20,1*	*0,9*
IT, software and computer services	22 714	24 839	25 596	27 327	29 395	31 154	34 704	*11,4*	*52,8*	*2,0*
Publishing	10 364	9 979	10 318	10 379	10 442	10 791	11 622	*7,7*	*12,1*	*0,7*
Museums, galleries and libraries	1 323	1 225	1 238	1 256	1 227	1 342	1 430	*6,6*	*8,0*	*0,1*
Music, performing and visual arts	5 457	5 733	6 228	6 959	6 969	8 280	8 237	*-0,5*	*51,0*	*0,5*
Creative Industries	**63 425**	**67 248**	**70 723**	**74 868**	**79 953**	**85 308**	**91 828**	***7,6***	***44,8***	***5,3***
UK	**1 422 028**	**1 458 820**	**1 505 718**	**1 564 430**	**1 638 722**	**1 684 937**	**1 744 435**	***3,5***	***22,7***	***100,0***

Notes
1. Data are in current prices (i.e. have not been adjusted for inflation).
2. 2016 GVA is based on the output measure of GVA to allow consistency with the sector measures for 2016. This is aligned to average GVA up to and including 2015 (last Supply Use balanced year) but then uses growth in the output measure as a proxy for GVA beyond that. The 2016 figure therefore differs from ABML (Gross Value Added at basic prices). 2010 – 2015 GVA estimates use balanced GVA at current prices (ABML).
3. (p) = provisional

The number of UK creative economy businesses and their size is shown in Table 7.

Table 7. Businesses (thousands) in creative industries sectors, by number of employees in 2016. (DCMS, 2018)

	Micro	Small	Medium	Large	Total
Sector	1 to 9	10 to 49	50 to 249	250+	
Creative industries (in thousands)	269.7	12.1	2.1	0.4	284.4

Figure 9 illustrates the contribution of creative industries to the UK economy in terms of jobs, employment and the regional distribution of creative industry jobs.

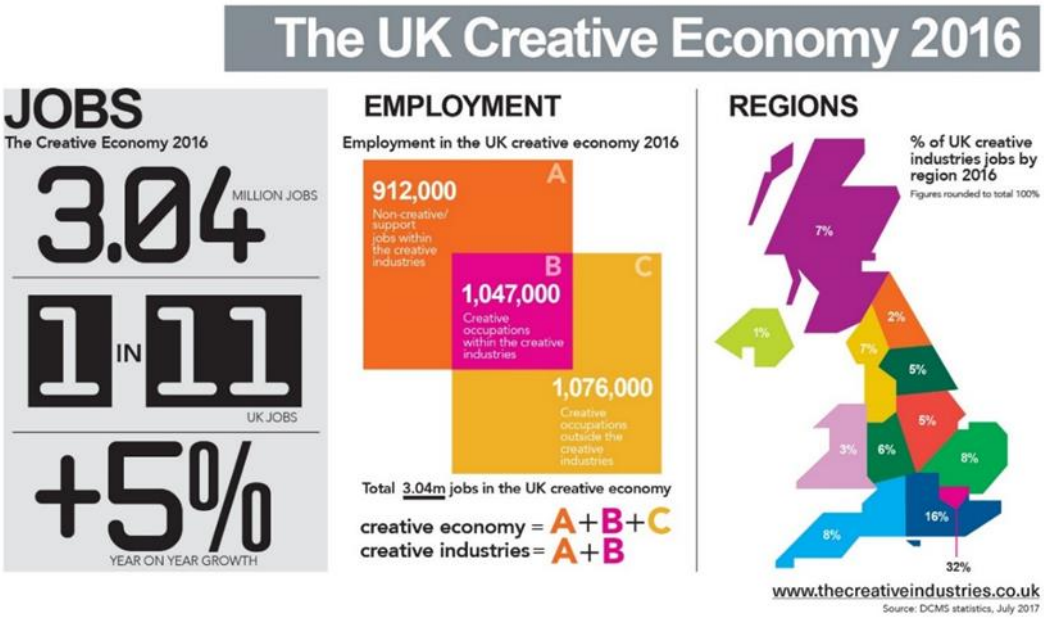


Figure 9. Jobs, employment and regional distribution of creative jobs in the UK, 2016. (CIC, 2017))

Overall, the strengths of the creative economy in the UK are seen as:

> *A long track record of creative excellence backed by public funding; a decent tradition of technology creation; diverse and dynamic cities housing world–class cultural institutions (most obviously, but not only, London); a public that is amongst the world's most sophisticated in its use of digital technology; strong, long–established and diverse corporate players in digital, …, and a start–up ecosystem ranked top in Europe (though seventh in the world) according to Startup Genome* (Bakhshi et al., 2013a:11).

This UK benchmark was done through desk research and interviews with the following experts: Caroline Norbury (Founder and Chief Executive of Creative England and member of the Creative Industries Council), Luise Yang (Research and Policy Officer at Creative Industries Federation), Hasan Bakhshi (Executive Director Creative Economy and Data Analytics at NESTA) and Adam Killey (Policy Officer at Creative England).

The UK benchmarking focuses on the institutionalisation of creative industries, policies created to support the industry, and regional development of creative industries in the country.

Institutionalisation of creative industries in the UK

The first step towards institutionalisation of the creative industries in the UK was the mapping of the creative sectors carried out in 1998. Since then, together with industry, the government has set up strategies aimed at creating growth, innovation and jobs across the creative sectors. In the following, we present an overview of the institutionalisation of the creative industries in the UK, starting with the operationalised definition of the sector, how the

creative industries evolved, and the main instruments and organisations set up to support its growth.

Definition

The focus here is not on the definition of creative industries per se, but rather on the process of how definitions have contributed to the legitimation of creative industries in the UK and how it has evolved to encompass new technological developments and creativity content and intensity within jobs and employment categories. The institutionalisation of creative industries in the UK started with the launch of the first nationwide mapping of creative industries (UK Government, 1998), which compiled the first, albeit rudimentary, statistics on the sector. This was subsequently reviewed and broadened to include other aspects such as creative jobs, the impact of digitalisation on the creative industries and, most recently, the creative intensity of different industries (Bakhshi interview, 2018).

The original definition of creative industries in the UK was 'those industries that have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property' (UK Government, 1998) and included advertising, architecture, the art and antiques market, crafts, design, designer fashion, film and video, interactive leisure software, music, the performing arts, publishing, software and computer services, television and radio.

In response to criticism of the definition and means of measuring the contribution of creative industries (see e.g. Flew, 2012, chapter 1; Bakhshi et al., 2013a; Bakhshi et al., 2013b; British Council, 2017) there have been continuous efforts to improve conceptual understanding and data collection in order to determine the creative industries' added value to the UK economy. As stated by one interviewee:

> *'During the last 25 years, the data side of the definition has been further refined, qualifying different categories. The current listing of creative sectors has not changed, but what has changed is the explosion of the growth e.g. in the business sectors like gaming, virtual reality and artificial intelligence. Previously, those sectors had been classified as software businesses, or businesses within computer services sector, for being recognised as creation of creative intellectual property. Now they are recognised within the DCMS' (Department for Culture, Media and Sport) sector. This relates to the change that has happened in the national level around the ONS (Office of National Statistics) definitions. The UK has now established a framework for creative economy.'* (Norbury interview, 2018)

In 2006, the UK government formally adopted the term 'creative economy' to capture this sense of the wider contribution of the creative industries to economic and social life. The creative economy weaves together 'economic and cultural values' (Newbigin, 2010:15). Then, a redefined model of the creative economies was proposed in order to: 1) incorporate a greater awareness of the differences between the sectors; 2) incorporate a greater awareness of the differences within the sectors; 3) draw out commonalities based on the ways in which commercial value is created, where this value is located and, consequently, how it can be enhanced (through advice, support and investment) (Nesta, 2006:54). Basically, it reflected the need to analyse the creative industries as industrial sectors instead of as a set of creative activities based on individual talent. The model differentiates creative industries

into four distinct groups (clusters) (see Table 8) with interlocking spaces between them, as can be seen in Figure 10.

Table 8. Redefined model of creative industries: cluster groups and expertise. (Flew, 2012 based on Nesta, 2006)

Clusters	Description
Creative service providers	Earn revenues for devoting time and applying IP to other businesses and organisations. These include advertising agencies, design consultancies, architecture practices and new media agencies.
Creative content producers	Invest capital up-front to produce IP-protected outputs that are distributed to consumers/audiences, and who earn revenues through a mix of direct sales, advertising and subscriptions. These include film, television and theatre production companies, computer and video game development studios, music labels, book and magazine publishers, and fashion designers.
Creative experience providers	Sell the right for consumers to experience specific activities, performances or locations in a particular time and place. These include theatre, opera and dance production companies, and live music organisers and promoters, and can be extended to live spectator sports, festivals, cultural institutions and tourist promotions
Creative originals producers	Are involved in the creation, manufacture or sale of physical artefacts, whose value is derived from their perceived cultural or creative value, exclusivity and authenticity, i.e. they are typically one-offs or produced in limited production runs rather than mass produced. This includes much of the visual arts, crafts and designer-makers (e.g. of specialist clothing).

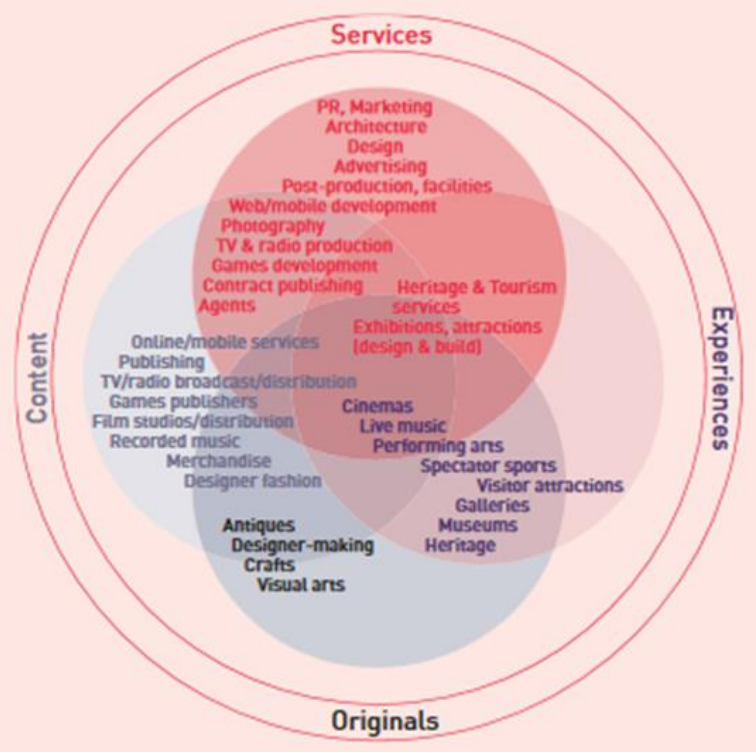


Figure 10. The redefined model of creative industries. (Nesta, 2006:55)

To address the criticisms related to the definition and measuring of creative industries in the UK, Nesta developed an analytical framework: the Dynamic Mapping (Bakhshi et al., 2013b), whose main principles were adopted by the DCMS in 2014, and included a more transparent and better understanding of the geography of the UK's creative economy workforce and made possible to make more accurate international comparisons of the UK's creative economy because of the use of SIC codes, and of labour force surveys by using Standard Occupational Classification (SOC) codes. Nesta has advanced further to include data on job task descriptions and machine learning techniques, which resulted a wider range of occupations being identified as creative and enabled the calculation of the percentage of the workforce in a creative occupation (creative intensity) in all industries, and its distribution across the different sectors of the UK economy (Bakhshi interview, 2018).

Considering the definition as a first step to recognise and legitimatise creative industries, the second one can be considered as the creation of policies to address key issues affecting the creative industries. Therefore, a range of policies have been elaborated involving several government departments and key stakeholders from creative industries, including especially member organisations of the Creative Industries Council (CIC) such as Arts Council England, the British Film Institute, Creative England and the Creative Industries Federation (the Federation), organisations that will be described below.

Policies supporting creative economy

The creative economy is intertwined with a range of other sectors, affecting the social and cultural as well as economic dimensions of society. The mapping of the UK creative industries in 1998 and 2001 revealed the following key issues to be tackled in order to support the growth of the creative sector: skills and training, finance, intellectual property rights, and exporting (Compendium Cultural Policies and Trends in Europe, 2011). Additionally, working groups composed of individuals from the creative industries, the public sector and the DCMS and the Creative Economy Programme of the DCMS (2006) were set up to address the following cross-sectoral issues: evidence and analysis; infrastructure; education and skills; technology; competition and intellectual property; access to finance and business; and diversity. The areas of overlap between these key issues and cross-sectoral issues have become the focus of policies implemented by the UK government together with industry and other stakeholders. In the following, we outline the main strategies that have been elaborated to implement policies for creative industries in the UK, from the first strategy in 2008, to the internationalisation strategy (2015-2020) and the latest strategy to support the growth of the creative industries implemented in 2018.

Creative Britain: New talents for the new economy (2008)

The first strategy addressing creative industries in the UK referred specifically to England and was launched by the DCMS in 2008. It was built in partnership with the government Department for Business, Enterprise and Regulatory Reform and the Department for Innovation, Universities and Skills. The strategy was founded on two key proposals: more opportunity for young people to develop creative talents at school; and more structured pathways into creative careers. It highlighted 26 commitments from the government in support of the creative industries, from grassroots to the global marketplace. The action plan for this strategy included education from basic levels through apprenticeships in creative industries and

regional development. Table 9 presents a summary of the main points of the Creative Britain strategy.

Table 9. Summary of commitments under the Creative Britain strategy. (Based on DCMS, 2008)

Objectives	Actions
Provide creative education to children	Establishment of the 'Find Your Talent' programme – piloting five hours of culture a week for children and young people
Turn talent into jobs	Creation of a talent pathways scheme to support and inspire young people from all backgrounds to pursue careers in the creative sectors Promotion of diversity in the creative industries workforce Ensure students are learning skills to contribute to the creative economy Encouraging employers and skills providers to set up ground-breaking new innovative places of learning Providing education in and development of creative skills for people aged from 14 through to 25 Establishment of apprenticeships across the creative industries
Support research and innovation	Fomenting of new collaborative R&D ideas for the creative industries through provision of £10 million by the Technology Strategy Board Launch of a £3 million Creative Innovators Growth Programme by NESTA Launch of Knowledge Transfer Network for the creative industries by the Technology Strategy Board Commissioning by the Department for Innovation, Universities & Skills of research to improve quantification of economic benefits of creative industries
Help creative businesses grow and access finance	Arts Council England will help deliver the objectives of the Creative Economy Programme Establishment of network of regional cases for the creative industries in the South West, South East, North West, North East and West Midlands by the Regional Development Agencies Encouragement of bids for Enterprise Capital Funds from the creative industries and expect to see increased investment flows as a result
Foster and protect intellectual property	Acting to prevent illegal file sharing – with a view to implementing legislation by April 2009 Enforce IP protection by the UK-Intellectual Protection Office Awareness raising of the value and importance of IP
Support creative clusters	Piloting of creative economy strategic frameworks in the North West and South West by the Regional Development Agencies Review of barriers to investment in next generation broadband Improve local infrastructure for local governments Development of 'mixed media centres' by the UK Film Council, in association with Arts Council England and the Arts and Humanities Research Council Encouragement of protection of live music venues
Promote Britain as the world's creative hub	Implementation of internationalisation strategy for UK's creative industries by the UK Trade and Investment agency Launch the World Creative Business Conference Promotion of London's festival and foster cooperation with festivals around the country
Keep the Strategy up-to-date	Implement structures to ensure development of the Creative Economy Programme

Creative industries growth strategies (2014, 2016)

The specific growth strategies for the creative industries in the UK are the two editions of the creative industries strategy 'Create UK' in 2014 and its update 'Create Together' in 2016, both published by the CIC. These strategies highlight key areas 'where there are barriers to growth facing the sector' including access to finance, regulation, intellectual property and exports. The CIC has put in place 'task and finish' working groups designed to address these areas. The aim of the creative industries strategies has also been to unite the different parts of the creative industries behind common goals and to speak with one voice on the issues that cut across the sector. In 2016, the Creative Industries Council's 2016 refresh "Create Together" included a five year plan additional targets for the sectors. An international strategy for creative industries has also been implemented, and is shown next to illustrate UK's position in regards to internationalisation of the sector, bearing in mind that this is an issue taken up in other strategies as well.

UK Creative Industries International Strategy (2015-2020)

The UK has an international reputation in creative leadership but faces strong competition from Europe, North America and other growth economies. Therefore, a strategy was set up to guide the internationalisation of creative industries in the UK for the year 2020 with a focus on new-to-export companies, current exporters seeking internationalisation of their businesses, and new trade and investment partnerships with global creative companies to access new high-value opportunities.

Table 10 presents the internationalisation strategy for creative industries in the UK. It is based on the document 'UK Creative Industries - International Strategy' from the UK Trade and Investment Authority (UKTI, 2014) and depicts the aims of the strategy, called 'Big wins', and the actions to be implemented and the roles to be developed by government and industry actors.

Table 10. Summary of the UK's Creative Industries International Strategy. (Based on UKTI, 2014)

Aims	Actions	Role of government (UKTI)	Role of Industry
Create overseas partnership with the greatest potential to generate new business	Establish alliances in high-growth markets Ensure a strong UK presence in creative clusters in global priority markets Ensure that creative businesses support the international growth of British brands through e-retailing	Lead direct engagement together with industry for key Strategy programmes Promote access to UKTI services for new and experienced exporters and investors Support industry drive to encourage more creative companies to export or invest in the UK Raise awareness of UKTI export/investment services	Partner with UKTI to aid development and delivery of key Strategy programmes Maintain/extend existing directly delivered trade and investment programmes Lead (with UKTI support) a drive to encourage more creative companies to export or invest in the UK Raise awareness of industry and government export programmes
Maximise supply chain opportuni-	Enhance the impact of major overseas projects for the creative industries particularly through UKTI's		

ties for creative businesses	CI high value opportunity Winning business in the "experience economy"		
Focused targeting to drive inward investment	Make the case for wider inward investments in the UK creative sector Highlight UK centres of creative excellence		

Industrial Strategy: Creative Industries Sector Deal (2018)

Upon publishing its Industrial Strategy plans through a consultation 'green paper' in January 2017, the UK Government highlighted the creative industries as one of five key sectors that would receive an early 'sector deal' – a package of commitments from the government and industry to help grow the sector. Following the announcement, the CIC mobilised and focused their work to develop a series of proposals for the sector deal, announced in March 2018.

The deal contributes to the Industrial Strategy's vision to improve productivity through improved job growth, innovation, infrastructure, business environment and places across the UK. It aims to unlock future growth across Britain, create jobs and develop cutting-edge technology of the future. The creative industries already export substantially more than their share of the economy, and growth at home will also help power the sector to make further strides abroad. In regard to the creative economy, the key commitments include (CIC, 2018):

- Research Council to support eight creative research and development partnerships across Britain and £33 million to invest in immersive technology products, services and experiences. This will support new uses of virtual reality in areas like video games, interactive art shows and augmented reality experiences in tourism that will capture the world's attention and double Britain's share of the global creative immersive content market by 2025.
- £2 million to support an industry-led creative careers programme aiming to reach at least 2,000 schools and 600,000 pupils in two years and industry development of apprenticeship standards.
- £2 million to extend the 'Get it Right' campaign to tackle online piracy and educate consumers on the value of copyright and direct them to legitimate websites.
- A new free school based in Islington with places for 1000 students (16+) from across the capital. The London Screen Academy's curriculum will include a University of the Arts London (UAL) Creative Diploma and A-levels and is set to open in Sept 2019.
- Improved access to finance from the British Business Bank for high-growth creative businesses outside of London, with up to £4 million to be invested in a new programme of investment readiness support for creative businesses.
- A new creative industries Trade and Investment Board, comprising industry and government, to replace the current Sector Advisory Group with the ambition of in-creasing creative industry exports by 50 per cent by 2023 and boosting the number of creative businesses exporting.

- New action to crackdown on copyright infringement. A landmark code of practice brokered by government and industry in 2017 reduced the prominence of illegal sites returned in search results. A series of roundtables between rights holders and platforms will consider the need for and develop a similar approach in relation to the online advertising industry, social media, and online marketplaces.

Figure 11 summarises the main events in the evolution of the creative industries concept, policies and organisations within the UK.

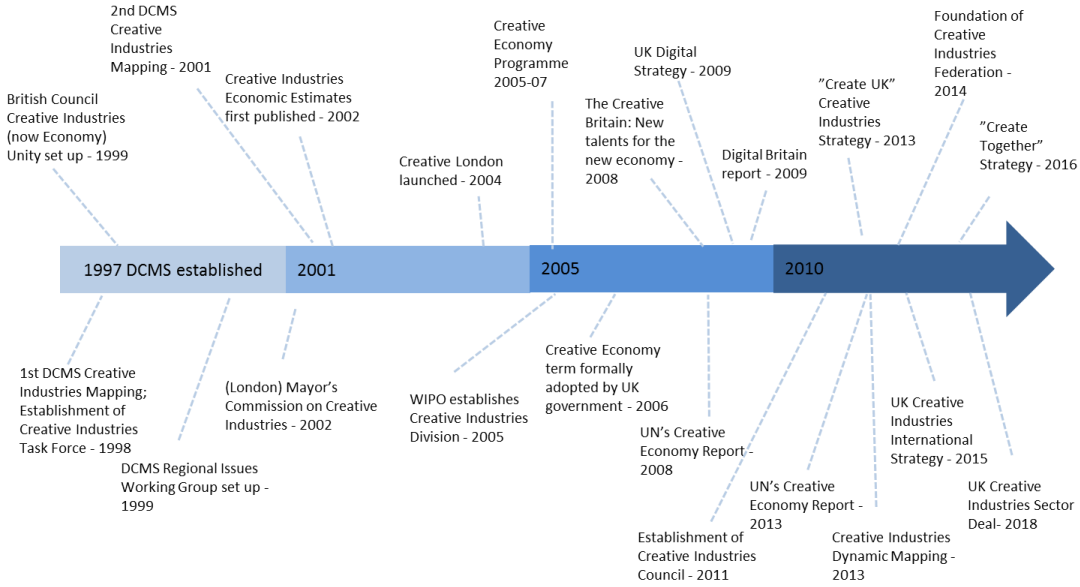


Figure 11. Key events in the evolution of the creative industries concept and policies. (Expanded from Bop Consulting, 2010:19)

In the following, we present topics of relevance to Finland regarding the benchmarking of UK organisations and practices related to cross-industry collaboration, skills development, regional development and funding and finance for creative industries.

Cross industry collaboration

Cross industry collaboration is an important element in all of the UK's government strategies. For the purpose of this benchmark, specific attention is paid to the Industrial Strategy and its sector deal and the Knowledge Transfer Network (KTN) (https://ktn-uk.co.uk/). The Knowledge Transfer Network is an example of a well-functioning organisation that supports collaboration across a diverse range of 17 industries, including digital and creative industries.

The aim of the KTN is to help businesses get the best out of creativity, ideas and the latest discoveries, to strengthen the UK economy and improve people's lives. It connects organisations and individuals to pursue new ideas and opportunities with expertise, markets and finance through its network of businesses, universities, funders and investors. A team dedicated to the digital and creative industries helps individuals and companies to have access to funding, expertise and innovators from other sectors (KTN, 2018). KTN is part of Innovate

UK, the UK innovation agency, an organisation of about 300 people drawn mainly from business, which is part of UK Research and Innovation (UKRI), a non-departmental public body funded by a grant-in-aid from the UK government. UKRI is the national funding agency investing in science and research in the UK. It operates across the whole of the UK with a combined budget of more than £6 billion, bringing together the seven Research Councils, Innovate UK and Research England (UKRI, 2018).

Creative England is another example of an organisation running activities in support of cross-industry collaboration that also demonstrates collaboration between the creative and the health sector. Creative England has run specific programmes to support creative and digital businesses to innovate the UK's healthcare sector – the Interactive Healthcare Fund (in partnership with Academic Health Science Network - AHSN, and regional partners). For this programme Creative England deployed its expertise in managing and facilitating creative sector-focused investment funds with the AHSNs' mission to improve healthcare through localised public and private sector collaboration and innovation. By 2017, the fund had invested £1.7 million into 18 creative and digital companies, leveraging significant private investment to support the development of an array of highly innovative healthcare products and services (Creative England, 2017). Creative England is also involved in an ongoing project funded by the European Regional Development Fund called e-health Productivity and Innovation in Cornwall and the Isles of Scilly (EPIC), in partnership with Plymouth University, Kernow Health CIC, Cornwall Partners in Care, Patients Association, who will work to find technologies that can best help improve services, along with those which are, or can be, produced within Cornwall. Creative England has also run project in 2015 in partnership with Disney Entertainment, which produced gamification apps for healthcare and well-being (see following box for an example of the success of the partnership).

Example of a successful case of cross-industry collaboration

Creative England and Disney Studios collaboration produce games for healthier life styles

Creative England and Disney UK competition
Three regional creative businesses have reached the final stage of pitching to win funding from Creative England and Disney UK to create a new digital tool to help families lead healthier lifestyles.
The finalists included the Leeds based Brass Alt, Liverpool's Citrus Suite and The Moment from Plymouth. Each, competed to take home £80,000 as part of our new partnership with Disney UK which challenges local creativity and innovative technology to provide a digital healthcare solution for families.
The three companies reached the final stage after Disney UK and Creative England made an initial investment of £5,000 to develop proof of concepts. The ideas include a healthy living entertainment app to allow children to become their favourite Disney character (Brass Alt) an exercise game to bring families together in joint fitness challenges (Citrus Suite) and a Disney character themed recipe book full of healthy living challenges for families to participate in together (The Moment).

Source: http://www.creativeengland.co.uk/story/finalists-pitch-for-creative-england-and-disney-uk-competition

Additionally, good examples of cross-sector collaboration can increasingly be found in the innovative work carried out in creative content, with the deployment of immersive technologies such as virtual reality, augmented reality, mixed reality and haptics communication (Killey interview, 2018). For example, immersive technologies have been targeted by a number of new programmes in the UK, such as Immerse UK, launched by Innovate UK in 2016.

The programme is managed by KTN and comprises a special interest group of 1,700 leading businesses, researchers, activists, thinkers and investors (KTN, 2018). Mateos-Garcia et al. (2018) estimated that there are 1,000 immersive-specialist companies in the UK employing around 4,500 people and generating £660 million in sales. In a survey among those companies, although the majority, 80% of the companies, indicated they operate in the creative and digital markets, two-thirds of them mentioned other markets ranging from education and training to architecture, advanced manufacturing and energy. Also, as part of its Industrial Strategy, and part of the Creative Sector Deal, the UK Government has committed £33 million towards supporting developments in immersive technologies. The new programme Immerse UK and the provision of specific funding for this emerging sector reveals how the creative sector, industry, government and supporting organisations are able to respond quickly to and support new opportunities for growth and development.

Regional development

Mateos-Garcia and Bakhshi (2016) have produced reports highlighting 47 regional creative clusters located throughout the UK, based on an economic methodology that identifies hotspots where groups of similar creative sub-sectors gather, accounting for performance factors such as regional GVA contributions, job growth and the strength of local networks. For the identification of clusters, the authors used travel-to-work-area (TTWA) as a proxy to identify clusters and produced a map (see Figure 12) showing that creative clusters have a stronger presence in London and the South East (together comprising around a third of all clusters identified), but that there are also hotspots of creative activity throughout the UK, although only just over one-fifth of the clusters are in northern TTWAs. These findings illustrate that a hugely important part of the UK's policy is to make sure opportunities reach other regions outside London, the object of action of the industrial strategy being to make creative industries work for everyone. The UK Government has developed programmes designed to drive growth in the regions outside of London and the South East, where there are higher levels of poverty and lower levels of productivity. These include regional-focused, sector-agnostic investment programmes such as the Northern Powerhouse and Midlands Engine investment funds; as well as creative sector-specific programmes such as the upcoming Arts and Humanities Research Council's £80m programme (Killey interview, 2018).

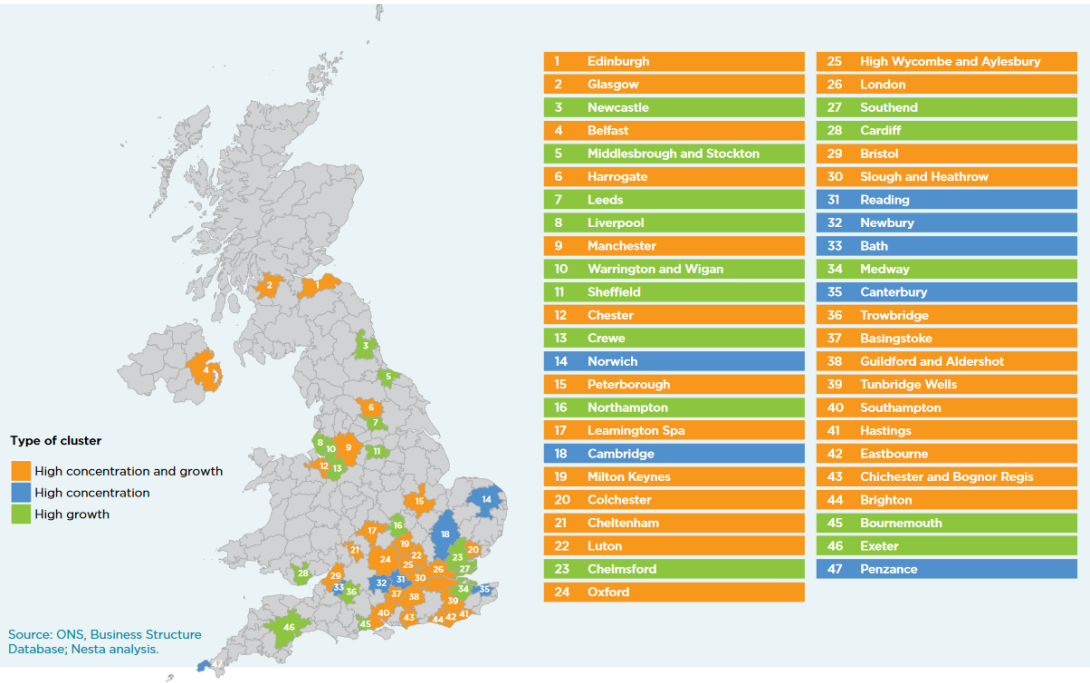


Figure 12. Regional distribution of UK's creative clusters. (Mateos-Garcia and Bakhshi, 2016:17)

As a matter of importance to policy makers in regard to fostering creative clusters, the following aspects, as identified by Bazalgette (2017), can be highlighted: identification of local specialisation in terms of industry sectors, and identification of catalysts for attraction and retention of creative businesses and individuals. In regard to the latter aspect, the presence of local universities with a focus on creative industries is of crucial value. As for interventions, Killey (interview, 2018) cites the relocation of big players in the creative industries (such as relocation of BBC & IT to Salford) as a key means by which the government and companies can stimulate the growth of creative clusters. Table 11 shows examples of creative clusters in the UK and what they have in terms of the aspects mentioned.

Table 11. Examples of creative clusters in the UK. (Bazalgette 2017:24-25)

Creative Cluster TTWA	**Example CI Specialisms**	**Notable Areas/ Projects**	**Creative Industries Statistics**	**Catalyst, Anchors**	**Example Cluster Interventions**
London	Multiple (Advertising, Designer Fashion, Radio, Film, TV, Publishing)	King's Cross Creative Quarter, Soho, East London, Fashion Hub, Makerversity Playhubs	81.7k[2] businesses 442k employees 5.4 avg.[3] firm size £41,8bn[4] GVA[5]	Creative institutions, accessibility, supply of creative businesses, high levels of networking	**Leadership Intervention**: Appointing London Night Tsar to promote 24hr[6] culture **Affordable Workspace**: Regeneration of King's Cross (£500m of Government finance). Piloting 'Creative Enterprise Zone' with co-located affordable housing.
Manchester	Advertising, TV	Media City, Sharp Project, Northern Quarter	8.2k businesses 43k employees 5.2 avg. firm size £2.3bn GVA	Long standing cultural institutes. High-regional consumption/celebration Council & private of content. Universities geared to creative industries.	Relocating BBC & ITV to Salford. **Space Repurposing:** Investment in old office refurbishment to house Sharp project.
Glasgow	Film, TV & Music Production	Creative Clyde, Enterprise Zone,	3.2k businesses 19k employees 5.8 avg. firm size £1bn GVA	Filming locations (space & architecture).	**Strength Mapping:** Glasgow Council commissioned research from Oxford University. **Designation:**

Creative Cluster TTWA	Example CI Specialisms	Notable Areas/ Projects	Creative Industries Statistics	Catalyst, Anchors	Example Cluster Interventions
		Film City Glasgow, MANY Studios, Wasps Studios		Universities geared to creative industries.	Culture Capital, Glasgow Film Festival, UNESCO City of Music status. **Affordable Workspace:** Creative Clyde Enterprise Zone. **Space Repurposing:** Wardpark Studios converted electronics factory.
Bristol	Film & TV, Music	BTQEZ, Watershed, Spike Island	4k businesses 14.5k employees £780m[7] GVA 3.6 avg. firm size	TV (BBC Bristol), film and animation firms (Aardman). Musical heritage.	**Stakeholder Networks:** 'Bristol Cultural Development Partnership' between industries, HEIs and Local Government. 'Bristol Media'network across multiple creative industry sectors.
Belfast	Film, TV, Architecture	Blick Studios, Harbour Studios Eighty81 Titanic Quarter/ Studios	1.6k businesses 11.5k employees 7 avg. firm size £433m GVA	Cultural heritage. Long standing Film industry (Hurst and MacQuitty).	**Designation:** City of Culture Status 2013 **Space Repurposing:** Refurbishment and expansion of Paint Hall Studios to form Titanic Studios.
Brighton	Software/Video, Games, Publishing	Fuse Box	3k businesses 7.7k employees 2.6 avg. firm size £581m GVA	Universities Black Rock game studio closure (talent dispersion).	**Stakeholder Networks:** Brighton Fuse, research project bringing together creative & digital sectors, HEIs[8], AHRC[9].
Leamington Spa	Video games	Arch Creatives, Leamington Spa Creative Quarter (planning stage), Natural agglomeration of circa 30 games companies in area	1.5k businesses 7k employees 4.7 avg. firm size £418m GVA	Long standing video games heritage (Codemasters established 1986). 'Silicon Spa'	**Branding/Designation:** Self-titled 'Silicon Spa', area well known in the video game industry. **Stakeholder networks and local planning:** Ukie (video games trade body and LEP developing 'A Blueprint for Growth' strategy document.
Cardiff	Media Production	GloWorks, Tec Marina	1.8k businesses 6.9k employees 3.9 avg. firm size £300m GVA	Large media centre (major TV broadcasters).	**Stakeholder networks:** TV production and digital media companies strong knowledge and technology exchange. Infrastructure: Broadband investment through city deal.
Liverpool	Arts, Design, Music	Baltic Triangle/ Creative CIC	1.8k businesses 5.6k employee 3.1 avg. firm size £300m GVA	Arts & Musical heritage Tate Liverpool.	**Designation:** 'Capital of Culture' status Stakeholder networks: 'City of Sound' festival and industry conference.

Notes:
[1] k = thousand
[2] avg. = average
[3] bn = billion
[4] GVA = Growth Value Added
[5] hr = hours
[6] m = million
[7] HEIs = Higher Education Institutions
[8] AHRC = Arts and Humanities Research Council

Universities are considered a vital component of the UK's creative industries, as emphasised by Mateos-Garcia et al. (2018). Their importance lies in the development of talent, provision of services, and access to cultural infrastructure, as well as carrying out research of relevance to creative businesses and organisations. The authors cite the new policy initiative of the Arts and Humanities Council's (AHRC) Creative Cluster programme as an example of how to boost university-industry collaboration within the sector.

The Creative Industries Clusters Programme, launched in 2018, plans to invest £80 million in eight new creative research and development partnerships bringing together the UK's creative industries with arts and humanities led research from the UK's university sector. The objective of the programme is to act as a catalyst to further grow the creative economy unlocking emerging fields and adapting new technologies with a new wave of R&D that will open up ways to create, distribute, and participate in products and experiences. The programme is part of the government's Industrial Strategy Challenge Fund, aiming at driving economic growth through the development of new products and services, generating a step-change in the creation of new jobs and the supply of high-value skills to fill them (AHRC, 2018).

In addition to the important role played by local universities geared to the creative industries in boosting the competiveness of creative clusters, another example of an actor that supports creative industry R&D is the Digital Catapult Centre (https://www.digicatapult.org.uk/), which is dedicated to promoting the development and early adoption of advanced digital technology. Digital Catapult works by:

- Providing physical and digital facilities for experimentation and testing that would otherwise not be accessible to smaller companies;
- Bringing together small companies, corporates, researchers and investors for the development of solutions for industry challenges, increasing productivity and opening up new markets faster;
- Connecting corporations, small businesses and academic researchers to get the latest thinking into the heart of industry and discover new ways to solve big challenges in the manufacturing and creative industries;
- Delivering collaborative R&D that leads to commercial exploitation and companies reducing risk; and
- Leveraging public funding to yield increased private investment.

Below is an example of Digital Catapult's impact based on its support for the digital and creative industries.

Case example of support for regional development focusing on digital and creative industries

Impact of Digital Catapult

Advanced digital technologies can accelerate growth and increase productivity across the UK economy. To help reach this full potential Digital Catapult, in 2017 alone, has had meaningful engagements with 638 startups and scaleups, 42 new industrial collaborations and 31 new academic engagements to drive innovation and adoption of advanced digital technologies. Digital Catapult delivers three core technology programmes, focusing on Future Networks, Artificial Intelligence and Immersive technologies, across two industry sectors (manufacturing and creative industries), driven by three regional centres and a national centre in London.

Source: https://www.digicatapult.org.uk/our-story

Skills development

Skills development in the creative industries is aimed at preparing individuals for occupations in the creative industries sectors and elsewhere in positions demanding creative knowledge. The formal definition of creative occupations is a set of roles considered creative on the basis of the skills required for the role, irrespective of the industry (DCMS, 2016). There has been a constant increase in the number of jobs in the UK creative industries (including both creative and support jobs categories) according to the DCMS (2016): in 2015 there were 2.0 million jobs in creative occupations, a 4.9 per cent increase since 2014 and 19.2 per cent higher than 2011.

The UK has a number of skills councils that support skills development and training in specific sectors; the two key organisations that support this work in the UK's creative industries are 'Creative & Cultural Skills' and 'Creative Skillset' (Killey interview, 2018).

Creative & Cultural Skills (CCS) (https://ccskills.org.uk) is an independent charity that provides careers advice and guidance, promotes apprenticeships, and delivers activities for young people through its National Skills Academy network of industry and education supporters. It gives young people opportunities to work and learn in the creative industries. Its activities are centred on programmes related to apprenticeship and training, the National Skills Academy, and Creative Choices (CCS, 2018).

CCS has been involved in apprenticeships since 2008 when it first supported the development of creative apprenticeship frameworks for industry. In this area, the CCS has been involved in:

- Setting up and running an Apprenticeship Training Agency for creative apprenticeships;
- Developing, in partnership with industry advisory groups, the creative apprenticeship framework;
- Working with further education colleges across the UK to help them deliver creative apprenticeships for the first time;
- Working as a delivery partner for the Future Jobs Fund programme to highlight the benefits of employing young people;
- Delivering Arts Council England's flagship workforce development initiative the Creative Employment Programme, supporting the creation of thousands of work-based learning opportunities for young people across England;
- Becoming a creative apprenticeship training provider.

With support from the Skills Academy network of education and training providers and industry supporters, CCS delivers programmes designed to improve the provision of skills and training in the creative and cultural industries. One of the main initiatives within the Skills Academy Network is the 'Leadership Colleges', which take a strategic lead in the network, driving initiatives, influencing education policy and partnering with CCS to develop the National College for the Creative and Cultural Industries. In this initiative, CCS works with college principals to jointly influence policy makers in both education and the creative industries, and drive employer engagement with education to develop new opportunities for creative sector growth across the UK.

Creative Choices is a resource for anyone that wants to work in a creative career. Within this programme, CCS promotes jobs and advisory publications and blogs from practitioners in the creative sector. It also holds live events for 13-16 year-olds and has an online panel of industry experts to answer questions regarding creative career paths.

Creative Skillset (https://creativeskillset.org) is a company limited by guarantee and also a registered charity. Its aim is to create clear progression paths, both for future audiences as they develop a passion for film, and for talented young people who will be the future of the UK film industry. Its members are drawn from senior employment and stakeholder interests from across the creative industries. It concentrates on the development of skills across the UK's screen-based creative industries, receiving funding from the British Film Industry (BFI). Creative Skillset is implementing the new five-year strategy of the BFI for 2017-2022 by preparing a ten-year skills framework and recommendations for tackling the needs related to the film industry diversity and future skills focus (BFI, 2017).

In an evaluation of the creative industries in the UK, Bazalgette (2017) emphasises that creative occupations are highly resistant to automation, meaning that the share of creative industry jobs is likely to rise steadily in the coming years in the UK. Considering that in these industries there is a higher percentage of self-employed, micro-enterprises and SMEs, as well as short-term project-based working and freelancing than in other economic sectors, combined with a highly mobile and internationalised workforce, there is a need for a targeted agenda to foster occupations in the creative industries. Two main factors were identified as affecting growth and higher productivity in the formation of talent for these industries: social and informational barriers to entry; and quality, consistency and availability of post-secondary education and training, including further higher education and continued development (Bazalgette, 2017).

Bazalgette (2017) identifies the following social and informational barriers to entry: financial barriers, lack of networks, knowledge and information barriers, geographical barriers and attitudinal barriers (cited by Nesta, 2016). Ethnic minorities, women, people with disabilities, and people from disadvantage backgrounds are seen as those facing the biggest challenges to entering and progressing in the creative industries. As an example of action to tackle these problems, the Federation and CIC have proposed a range of interventions to transform access to careers advice, support and information for young people, their careers and careers advisors, and to provide creative learning opportunities for school pupils. The main elements of the proposal are:

- Raise awareness of creative sector careers and provide information on how to pursue them by means of a creative careers campaign to improve the public's perception of creative careers and inspire people across the UK to pursue employment in the creative industries.
- An online creative careers gateway providing a single access point to existing and new material from across the creative sectors, showcasing the breath of opportunities and paths to entry.
- A new industry-led online one stop shop for schools, assembling and disseminating creative teaching material and careers information, supported by a business-led outreach programme, match-funding by industry and government, to support both curricular and extra-curricular activities. (Bazalgette, 2017:44)

In regard to quality, consistency and availability of post-secondary education and training, Bazalgette (2017:45) identifies these as areas in which important reform has been achieved by the government, with moves towards employer-led skills approaches and greater emphasis on regional strategies. The author points out that in creative industries, employers already work together to deliver specialist training centres, and industry-led initiatives tackle specific skills gaps. Examples of these are:

- National College for Creative and Cultural Industries, managed by CCS on behalf of a consortium of employers and industry organisations;
- Industry-led Next Gen Skills Academy for games, animation and visual effects;
- Government-funded BRIT School of Performing Arts and Technology sponsored by the British Recording Industry Trust (BRIT);
- Global Academy, partnered with the University of the Arts, London to focus on broadcast and digital media skills.

Other employers and representative organisations have developed accreditation models to tackle the issue of inconsistency and prepare graduates for the job market accordingly to the industry's needs. Nevertheless, inconsistency remains an issue, especially for microenterprises and SME employers, for whom a coordinated employer-led approach is challenging. The CIC is developing proposals to create a single system of accreditation based on direct and licensed accreditation to be implemented by higher education and further education providers.

With regard to skills development for creative occupations in the UK, Yang (interview, 2018) reports that there is room for improvement in promoting the embeddedness of creativity in society through the inclusion and education of creative industries related issues. In England, the school system is highly regulated by the government and, barring some exceptional cases, the action plans laid out in creative industry policies have not been implemented as planned. However, according to Bakhshi (interview, 2018) the situation is gradually observably improving due to continued efforts to refine the definition of creative industries, creative jobs, creative skills and creative intensity of jobs, due to the work done by Nesta, and due to better dialogue being established with experts in charge of education policies in the UK.

Funding and financing

Funding and financing for the creative industries are affected mainly by the size of companies, the project-based nature of the work and the scalability of creative industries solutions and products. For this benchmark we use the two schemes implemented by Her Majesty's Revenue and Customs (HMRC), the department of the UK government in charge of the collection of taxes, the payment of some forms of state support and the administration of other regulatory regimes including the national minimum wage. The schemes are: the Creative Industry Tax Reliefs (HMRC, 2018) and the Enterprise Investment Scheme (EIS) (HRMC, 2017).

The **creative industries tax reliefs** are a group of 8 corporation tax reliefs that allow qualifying companies to claim a larger deduction or, in some circumstances, claim a payable tax credit when calculating their taxable profits. The reliefs work by increasing the amount of allowable expenditure when a company makes a loss, where the company may be able to surrender the loss and convert some or all of it into a payable tax credit.

A company qualifies for creative industry tax relief if it is:

- Liable to corporation tax
- Directly involved in the production and development of:
    - certain films
    - high-end children's television programmes
    - animation programmes
    - video games
    - theatrical productions
    - orchestral concerts
    - museum or gallery exhibitions

Companies that claim creative industry tax reliefs are subject to special tax rules. These rules apply to all:

- Film production companies producing films (whether or not the films are intended for cinema release)
- Television production companies producing relevant animation, children's or high-end television programmes
- Video games productions
- Theatrical and orchestral production companies which claim relief
- museums and galleries which claim relief for an exhibition

To qualify for creative industry tax reliefs, all films, television programmes, animations or video games must pass a cultural test or qualify through an internationally agreed co-production treaty – certifying that the production is a British film, British programme or British video game. In all cases, formal certification is required to qualify. Theatrical productions, orchestral concerts, and exhibitions do not have to apply for and pass a cultural test. The certification and qualification is administered by the British Film Institute (BFI) on behalf of the DCMS. The BFI issues an interim certificate for uncompleted work or a final certificate where production has finished.

The **Enterprise Investment Scheme** (EIS) is a venture capital financing scheme for SMEs and knowledge-intensive companies. This scheme is meant to diminish the risk for individual investors. According to the EIS rules (HRMC, 2016), a company can attract investment up to £5 million a year with tax relief for individual investors. In order to qualify for the financing the company needs to: have been trading for at least 4 months; have no more than £15 million in gross assets; and have fewer than 250 employees.

Under the EIS, a SME can raise up to £5 million each year, and a maximum of £12 million in its lifetime, also including amounts received from other venture capital schemes. The company must receive investment under a venture capital scheme within 7 years of the first commercial sale.

The conditions for a SME or social enterprise to apply to the EIS are:

- has a permanent base in the UK
- carries out a trade that qualifies

- does not buy or sell its shares on a recognised stock exchange at the time of the investment
- makes its first sale, product or service, within 7 years

Knowledge-intensive companies can use the EIS to raise money for research, development or innovation under the condition that they are carrying out research, development or innovation at the time they issue shares (HMRC, 2017). As guarantee, the company's investors can claim and keep EIS tax reliefs relating to their shares. Companies can raise: 1) up to £20 million of investment in its own or any of its subsidiaries lifetime, and 2) money if the company (and any subsidiaries) received investment under a venture capital scheme within 10 years of its first commercial sale. The company can raise up to £5 million of investment per year, including the amounts received from other venture capital schemes.

The EIS for knowledge-intensive companies favours those companies that have fewer than 500 full-time employees at the time of issuing the shares. Other special conditions apply to this category of companies compared to SMEs. In general, the conditions for a company to use the EIS for financing of research and innovation is that:

- it is established in the UK
- it is not trading on a recognised stock exchange at the time of the share issue and does not plan to do so (also known as an unquoted company)
- does not control another company other than qualifying subsidiaries
- it is not controlled by another company or does not have more than 50% of its shares owned by another company.

Other resources for funding is made available by other organisations, such as Local Authorities and Local Enterprise Partnerships, the Arts and Humanities Research Council, the British Business Bank, Creative England, venture capitalists and angel investors, and funding from the National Lottery, for example to support the British Film Institute (BFI) and the Creative and Cultural Skills (CCS).

Additionally, at European level funding for the industry can be acquired through competitive calls applied to Creative Europe Fund and to European Regional Development Fund. With the implementation of the Brexit, CIC and the Federation, as well as the whole sector in UK, are concerned whether UK will have access to these funding instruments once the Brexit takes place, therefore are lobbying to secure them (concern made explicit by the interviewees).

Main organisations supporting creative industries

The establishment of institutions and organisations to support the creative industries in the UK is also part of the legitimisation of the industry. For the purpose of this benchmark, we focused on the organisations deemed most important for the status that the creative industries enjoy today. Based on local expert opinion (Killey interview, 2018) and taking into consideration the organisations mentioned in the previous section, we identify the following organisations as most important for the sector: the Department for Culture, Media and Sports

(DCMS), the Creative Industries Council (CIC), the Creative Industries Federation (the Federation), the Arts Council England, the British Film Institute (BFI), Creative England, the British Council, and Nesta.

The Department for Culture, Media and Sports (DCMS) (https://www.gov.uk/government/organisations/department-for-digital-culture-media-sport) aims to help the creative industries thrive by raising their profile and supporting their development through a range of policy objectives. The DCMS's work regarding the creative industries includes:

- Creative Economy Programme: the first step in the DCMS's goal to make the UK the world's creative hub;
- Exporting goods and services to overseas markets;
- Education and skills: a number of government initiatives and funding schemes supporting skills development and training in the creative industries;
- Regional support: regional organisations often deal with issues that have been identified as of most concern to creative companies, including access to finance;
- Access to business support and funding: the DCMS works with other government departments and other organisations to ensure that the creative industries have the support they need to succeed;
- Support across government – the DCMS works closely with key players across government to address and monitor policy that affects the creative industries; and
- Tax and regulation: the DCMS works with HM Revenue and Customs on issues of taxation and regulation that affect the creative industries, including:
    - tax relief for filmmakers of British films
    - implementation of the e-Commerce Directive; and
    - definition of research and development for tax purposes.

The Creative Industries Council (CIC) (https://www.gov.uk/government/groups/creative-industries-council) is a joint forum between the creative industries and the government. The CIC's role is to be a voice for the creative industries focusing on the themes represented by its working groups: Access to Finance; Diversity; Education and Skills; Intellectual Property; Marketing and Communications; Regional Policy; Regulation; Digital Infrastructure; International; and Brexit. The CIC working groups contain representatives from other relevant organisations.

The CIC members are leading figureheads drawn from across the creative and digital industries including TV, computer games, fashion, music, arts, publishing and film. It is co-chaired by the Secretary of State for the DCMS, Secretary of State for Business, Energy and Industrial Strategy, and Chief Executive of BBC Studios. Its 26 members[26] are representatives of industry, creative industries associations and government organisations in charge of the sector (CIC, 2014).

The CIC's most recent work was to support development of key areas within the Government's Creative Industries Sector Deal as part of its Industrial Strategy.

[26] For up-to-date list of members check: https://www.gov.uk/government/groups/creative-industries-council.

According to Norbury (interview, 2018), the CIC brings all trade bodies together facilitating their communication with the government, being 'the place where those conversations are held'. The CIC has an influencing role through dialogue, evidence and lobbying.

In regard to financing the creative industries, Norbury (interview, 2018) informed that the government and the CIC are working together to develop a programme to improve access to finance for creative businesses as part of the industrial strategy. The CIC has a working group looking into how market failure is addressed with regard to access to finance for creative businesses. The group has representatives from banks, finance institutions, business angels, accountant firms and creative industry actors.

The Creative Industries Federation (the Federation) (https://www.creativeindustriesfederation.com/) was founded in 2014 and is the national organisation for the UK's creative industries, putting the sector at the heart of political, economic, and social decision-making. The Federation is entirely independent. Its revenues come from more than 1,000 companies, organisations, institutions and individual practitioners working in every part of the creative industries - commercial and publicly-supported - as well as in the education system that supports them all. The Federation has representative members in all cities, regions, and UK nations to strengthen the voice of the UK's creative industries, advocate sector priorities, convene its network with thought leaders, politicians, and practitioners, and deliver practical services to support creative community. It has two councils, the UK council and the international council, which are represented by academy, industry and government leaders, both locally and abroad.

The Federation's priority focus areas for 2018-2020 are:

- Creative Careers and Skills: aiming at restoring the centrality of creative and technical skills, advocating this case to government and delivering practical interventions to help young people, teachers, careers advisers, and parents better understand the range of creative jobs and entrepreneurial opportunities that are possible, and how to pursue them.
- Entrepreneurship and Growth: supporting the growth of creative enterprises by delivering practical services for its members. Building on the strength of its research and advocacy to date, the Federation promotes the priorities of its members and works closely with national and local government to identify means to grow the sector.
- EU and International: promoting the sector internationally, especially in view of Brexit and the need to tackle potential new hindrances to trading within the EU. The Federation aims to be recognised as a global leader in promoting creative industry, convening practitioners and policy-makers from around the world to identify how the creative industries can tap into new markets and respond to global challenges. It also aims to play a central role in shaping British future relationship with the EU and influence the UK's trade deals to help unlock the sector's global growth potential.

As stated in the Creative Industries Sector Deal, the Federation will be leading an industry-led creative careers programme to inspire a passion for creativity and an appetite to pursue a creative pathway amongst young people of all backgrounds throughout the UK. The government has committed £2 million of funding to support the programme, which includes the creative careers campaign and its complementary activities. The programme is needed especially to address the severe skills shortage faced by the sector, particularly in areas that

demand a blend of technical and creative skills, such as video games, visual and special effects, and architecture (Yang interview, 2018). With increasing automation, an ever growing need for creativity in all lines of work, and easy access to new technologies, the demand for creative skills will also be even higher in future. (Bakhshi and Yang, 2018)

The Arts Council England (ACE) (https://www.artscouncil.org.uk/) is the national development agency for the arts and culture across England. It is a non-departmental public body of the DCMS, which channels funding it receives from the Government and the National Lottery. Its origins go back to 1946, with the creation of the Arts Council of Great Britain, and its present form dates from 1994 when the Arts Council of Great Britain was divided into three separate bodies for England, Scotland and Wales. In its strategic plan for the period 2018-2020, which is based on its ten-years strategy launched in 2010, ACE will invest across three key funding streams:

- £409 million per year in 830 arts organisations, museums and libraries in its National Portfolio;
- £97.3 million of National Lottery funding per year in Arts Council National Lottery Project Grants, as open-access funding programme;
- £72.2 million per year in its Arts Council Development Funds which will focus on diversity, resilience, innovation in business models, leadership development and creating more pathways for a wider range of people to become part of the arts and culture sector. (ACE, 2018)

Among these funding streams, the Arts Council England Development Funds are of particular interest, as they focus on diversity, resilience, innovation in business models and leadership development. For example, there is a commitment to invest £37 million over four years in the flagship programme 'Creative People and Places', which targets areas with low levels of engagement in art and culture and a new development fund will be announced in order to encourage work from independent creative practitioners.

The British Film Institute (BFI) (http://www.bfi.org.uk/) is a film and charitable organisation, founded in 1933, which promotes and preserves filmmaking, television, animation and moving image in the UK, combining cultural, creative and industrial roles. It is a non-departmental public body sponsored by the DCMS. The BFI has five objectives (BFI, 2017):

- To encourage the development of the arts of film, television and the moving image throughout the UK;
- To promote their use as a record of contemporary life and manners;
- To promote education about film, television and the moving image generally, and their impact on society;
- To promote access to and appreciation of the widest possible range of British and world cinema;
- To establish, care for and develop collections reflecting the moving image history and heritage of the UK.

As the main body for the film industry in the UK, the BFI maintains a number of creative, strategic and funding relationships with industry and key stakeholders investing in education and audiences, filmmaking and film heritage. BFI supports its partners by distributing Grant-

in-Aid and Lottery funding. In its 2017-22 strategy, BFI aims to spend £500 million in activities related to promoting regional spread of filming and audiences; enhancing learning and skills for careers in the film industry; and supporting productions of emerging talents. Organisations supporting the implementation of BFI's strategy are, for example, the Creative and Cultural Skills and Creative England.

Creative England (http://www.creativeengland.co.uk) is dedicated to the growth of the creative industries, established on the basis that 'talent is everywhere but opportunity isn't'. It is a public purpose organisation that mobilises public and private resources to garner support and investment for the creative industries. It works with a wide range of partners and investors from commercial brands and companies such as Facebook, SKY Arts and Microsoft to local authorities, cultural bodies and universities, national government, and the European Commission. It provides investment and services supporting talented people and their creative ideas, especially in TV, film, games and digital media industries, with offerings ranging from direct investment and soft loans to business support programs and mentoring. It focuses on: supporting the growth of talent and businesses; securing a sustainable infrastructure of support for creative companies outside London; identifying new and expanding markets for creative content; promoting the creative talent of the English regions to the world; and championing the economic and cultural contribution of the creative industries. According to Norbury (interview), although Creative England has a small team of about 45 people, it has been able to establish a strong network throughout the country with offices in Bristol, Manchester, London and Elstree Studios - and through organising industry events, as well as celebrating partnership agreements with local authorities and Local Enterprise Partnerships to deliver regional programmes – such as Proconnect in Manchester and Hertfordshire and GamesLab Leeds in Yorkshire – to support creative entrepreneurs and SMEs to develop their business and create new intellectual property.

The Creative England Trading Company (CE Trading) was incorporated in September 2014. The aim of CE Trading is to generate income by delivering Creative England's products and services on a commercial basis, in order to contribute towards the operational costs of the not-for-profit parent company and help aid its sustainability. By opening up new sources of commercial revenue, CE Trading is supporting Creative England's objectives to create a sustainable community of private partners and investors who are passionate about the creative industry and who want to invest in its long-term future.

With regards to funding, according to Norbury (interview, 2018), Creative England is an alternative source of funding for creative businesses that are not able to get funding elsewhere. Its Business Investment Programme invests public money through loans and equity investments ranging from £50 000 to £250 000, without request for collaterals, with a small administrative charge requested. Equity stakes are normally under 10%, having reached a participation in equity in about 35-40 firms. In Creative England's portfolio, there are companies that have grown rapidly, for example games company Avocarrot, received a £50,000 investment in 2013 and 18 months later had raised a total of $2m from VC and angel investors and doubled in size. The company went on to be acquired by Glispa Global for $20m in 2016. Creative England's funds have leveraged further finance. According to its last survey, between 2012-2017 it invested in 350 creative and digital SMEs, which have leveraged another £20 million in additional finance for those businesses. This results from very good due diligence processes and specialist business and investment team with experience identify-

ing and working with creative businesses with commercial potential. Creative England investments enable creative businesses to go on and raise further funding, both because the organisation is known for recognising potential in early stage businesses and talent, and because the process of raising Creative England funding enables entrepreneurs to develop their business skills and abilities to pitch their business proposition to investors.

Creative England has identified it has had a social value assessment, which is indicated, e.g. by how many jobs are created or safeguarded following an investment, the growth of business revenue following an investment, how much private money is leveraged through an investment and where the business is located and the impact it has on its local economy.

The British Council (https://www.britishcouncil.org/) is the UK's international organisation for cultural relations and educational opportunities and is represented in 110 countries worldwide. Its Creative Economy Unit was established in 1999 as part of its Arts Department to work with the UK's creative sectors and to develop a programme of work that would share the UK's experience of developing the creative economy and the wider impact of this process in terms of education, social inclusion, economic regeneration, and international engagement. The Creative Economy Unit focuses primarily on:

- **Policy and mapping effective policy making** by seeking to promote the global discussion and sharing of appropriate policy initiatives and perspectives, in recognition that the creative economy is both a global and a local phenomenon. Initiatives so far have included: international seminars; awareness raising programme on the importance of mapping exercises for the better understanding of the policy needs of different creative sectors, and toolkits for the development and distribution of resources on creative economy-related issues worldwide.

- **Skills and Infrastructure** by developing activities related to media training; **Infrastructure** by assisting the development of intermediary agencies that seek to provide tailored information and support to creative businesses; and **Business skills** by delivering training programmes for young creative business owners that seek to develop their business and sector-specific skills.

- **Creative entrepreneurship and networks** by focusing especially on young entrepreneurs and seeking to raise their profile, celebrating their achievements, and recognising their importance in informing policy making for the creative sector.

- **Leadership and cultural relations** by engaging the new generation of cultural leaders with key stakeholders around the world in the discussion and development of common strategies to tackle global cultural issues, and aiming at renewing the role of the cultural sector in addressing global issues and promoting cross-sectoral collaborations.

- **Insight and Intelligence** by developing a platform for the collection and discussion of issues around the creative economy, stimulated by information and interaction generated by the British Council's creative economy activities and networks.

Nesta (https://www.nesta.org.uk/) was established by the National Lottery Act in 1998, as a public body with a statutory remit to promote talent, creativity and innovation in science, technology and the arts. It is independent of government. In April 2012, Nesta became a charity and continued offering a mix of activities that include outcome-focused programmes (in areas such as education and the media), and grant funds including Innovation in Giving and the Digital R&D Fund for the Arts. Nesta is also placing a greater emphasis on providing skills and tools for innovators, alongside the continuing growth of its involvement in investment. Its focus areas are: creative economy, arts and culture; education; health; government innovation; health; innovation policy; and futures and explorations. In the area creative economy, culture and arts, Nesta produces research and policy papers aiming at enhancing definition of creative economy.

An overview of Nesta's vision for creative economy, arts and culture is presented below:

Nesta's role in the creative economy and culture

The challenge: How to grow the creative economy and help arts and cultural organisations thrive in a time of austerity.

Our response: We show the value of the creative economy, influence policies to help it grow, and help arts and cultural organisations thrive by making the most of digital technologies and new funding sources.

What we want
One million new creative jobs in the UK by 2030, and a resilient, innovative arts and cultural sector. Creative jobs are highly skilled, high productivity and resistant to automation. Nesta has addressed policies that meet the workforce needs of the creative economy - in areas like talent development, creative clusters, and research and development.
We want to see the arts and cultural sector make the most of new technology. by showing evidences of opportunities in the confluence between and technology in emerging art forms, improving access and new business models, and have backed dozens of projects testing new uses of digital technology.
We want the creative economy to be better understood by policy makers in finance, education and industry, as well as in culture. We have published detailed policy proposals and mapped the many creative hubs to be found right across the UK.
Our partners include: Arts Council England, Arts Council of Wales, Heritage Lottery Fund, Bank of America Merrill Lynch, Esmée Fairbairn Foundation, The Calouste Gulbenkian Foundation, Cardiff University, the Arts & Humanities Research Council, Ukie, Creative England and the DCMS.

We see new opportunities and challenges
Nesta conducts groundbreaking quantitative research on the creative economy - using methods like machine learning to identify and measure creative jobs.

We spark creative solutions from many sources
Early-stage innovation programmes: We run early-stage innovation programmes that discover and incubate new ideas. Example, the £7 million Digital R&D Fund for the Arts with Arts Council England and the Arts & Humanities Research Council, together with the Digital Innovation Fund for the Arts in Wales, which supported over 60 arts and cultural organisations to experiment with digital technologies in order to identify new business models and new ways to engage audiences. We have also experimented with using matched crowdfunding to back arts and heritage projects.

We shape the most promising ideas so they can work at scale
Scaling promising solutions: We have helped take new ideas to large scale - like National Theatre Live which broadcasts the performances from the London stage to cinemas and arts centres around the world and now has a global paying audience of 1.5 million.
The £7 million Arts Impact Fund, delivered by Nesta, is breaking new ground by bringing together public funders, philanthropic organisations and other private investors to support arts organisations to grow and better evidence the social impact they have. We are now developing a longer-term follow-on fund which we hope will continue to support growth, and influence how arts organisations, investors and other funders demonstrate the positive impact of arts and culture on society.
We have also run mentoring programmes and other business support to help creative economy entrepreneurs grow their organisations - such as our Creative Business Mentoring Network.

Source: www.nesta.org.uk (underlines by the authors)

The above overview of selected organisations supporting the UK's creative industries reveals that important steering in the ecosystem comes from the government, especially from the DCMS, for example by sitting together with industry in representative organisations,

funding creative industries either directly or by channelling lottery funds, and supporting local governments and regional development in focusing on the creative industry. The creative industries have increasingly organised themselves in order to evolve from a wide range of individual industry associations to establishing a representative body (Federation) aiming at establishing a common voice for the creative industries. One is led to believe that these organisations comprehensively address the key issues related to the creative industries and their growth, such as education and skills, internationalisation, evaluation and monitoring, and incorporation of new technologies. For benchmark purposes choices could be made related to the topics the organisations cover and their means of operation.

3.3. The Netherlands

Background: Top Sector Creative Industry and its actors

The term 'Creative Industries' popularised by the Tony Blair UK government and the Creative Industries Mapping Documents outlining the sector's potential as new sources of growth and development led the ministry of Culture in the Netherlands to recognise the Creative Industry as one of eight Key Sectors for the Dutch economy, in 2004. Activities for supporting growth of the sector were planned and initiated, but after four years, an evaluation by a government progress committee showed that the sector was still unorganised and too fragmented to show impact. The industry was advised to organise its clusters and to plan their concrete performance. In answer to the recommendation of the committee, the stronger clusters and networks of the creative industries (design, architecture, games, fashion) formed the Dutch Federation of Creative Industries (FDCI Federatie Dutch Creative Industries), which was later extended when other clusters joined (photography, digital agencies, advertisement) (Dutch Creative Industry Interactive Timeline, 2017; Bas interview, 2018).

Prime Minister Rutten's cabinet adopted a sector-specific Top Sector policy approach in 2010. The Top Sector approach focused on nine economy sectors including Agriculture and Food, Creative Industries, Chemical Industry, Energy, Logistics, Life Sciences and Health, Water, Horticulture and starting materials, as well as High Tech (Bas interview, 2018; Top Sectors, 2012). The two main goals of the Top Sector approach were to **boost innovation and enhance collaboration**. The policy was based on:

- Strategy on research, development and innovation focused on public-private collaboration in the nine selected sectors.
- 'Backing the Winners', a sector already performing well should be backed strongly.
- Strengthening the top sectors' international position.
- The government, private sector, universities and research centres working together in the Top Sector Alliance for Knowledge and Innovation (TKI - Topconsortia voor Kennis en Innovatie) to make the top sectors even stronger. The alliance looks for ways to get innovative products or services onto the market. The government matches private investments with 25%. The (overall) Top Sector policy is supported by 500 M€ government funding yearly.
- Creative Industries benefits from this policy for 14 years. (Bas interview, 2018)

By 2012, the potential benefits of the creative industries to other economy sectors had become apparent, such as in supporting innovation and transitions, and the opportunities and solutions provided by the creative industries to societal problems was also understood. This resulted in the establishment of the Top Sector Creative Industry with the objective of making the Netherlands Europe's most creative economy by 2020.

As in the other selected top sectors, the task force (so-called Top Team) responsible for Top Sector agenda and policy was formed along with a consortium for knowledge and innovation, CLICKNL (Creative Learning Innovation Co-creation and Knowledge NL) (Ahsmann interview, 2018). Following the public-private partnership governance model, the Top Team consists of five representatives from the government, research institutions, and science and creative business. The Top Team is chaired by a sector agenda figurehead and supported by a private secretary and an account team from the Ministries of Economic Affairs, Education, Culture and Science and Foreign Affairs. It convenes on average once every two weeks (Janssen et al., 2017).

The Dutch Creative Council (DCC) was established at the initiative of the Federation Dutch Creative Industries in 2012. This is an independent strategic advisory board with representatives of the various networks within the creative industry. The Top Team effectively used to act as the board of both the DCC and CLICKNL. The Council convenes once every two months. The Federation Dutch Creative Industries (FDCI) is relevant to the working method of the Creative Industry. The FDCI is an umbrella organisation of eight sector organisations within the sector, and represents the interests of its members towards the Dutch Creative Council. (Janssen et al., 2017)

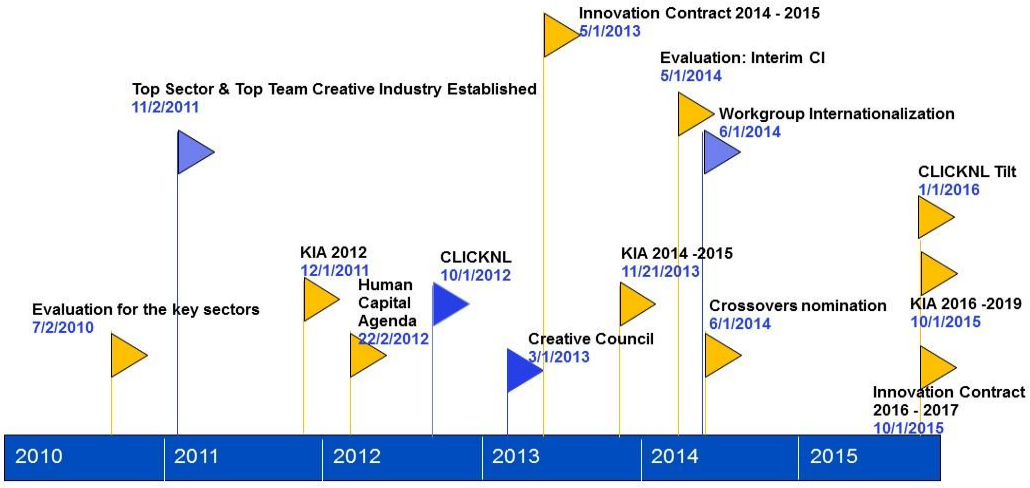


Figure 13. Timeline for the Creative Industry in the Netherlands. (Dutch Creative Interactive Timeline, 2017)

Part of the policy was to establish agendas that would guide the activities of the top sectors. The Top Team Creative Industry focused on three strategic areas of operation and designed the agendas of internationalisation, human capital (Human Capital Agenda, HCA), and

knowledge and innovation, with a special focus on crossovers between sectors, since it was recognised that the strength of the Creative Industry lies there (Ahsmann interview, 2018). In declaration of the intention to work towards these goals, an innovation contract (KIC - Kennis- en Innovatiecontract) was made between government, the knowledge world, the top sector and CLICKNL, subject to renewal every two years.

The landscape of the Creative Industries as formed by the Top Sector policy implementation is presented in Figure 14.

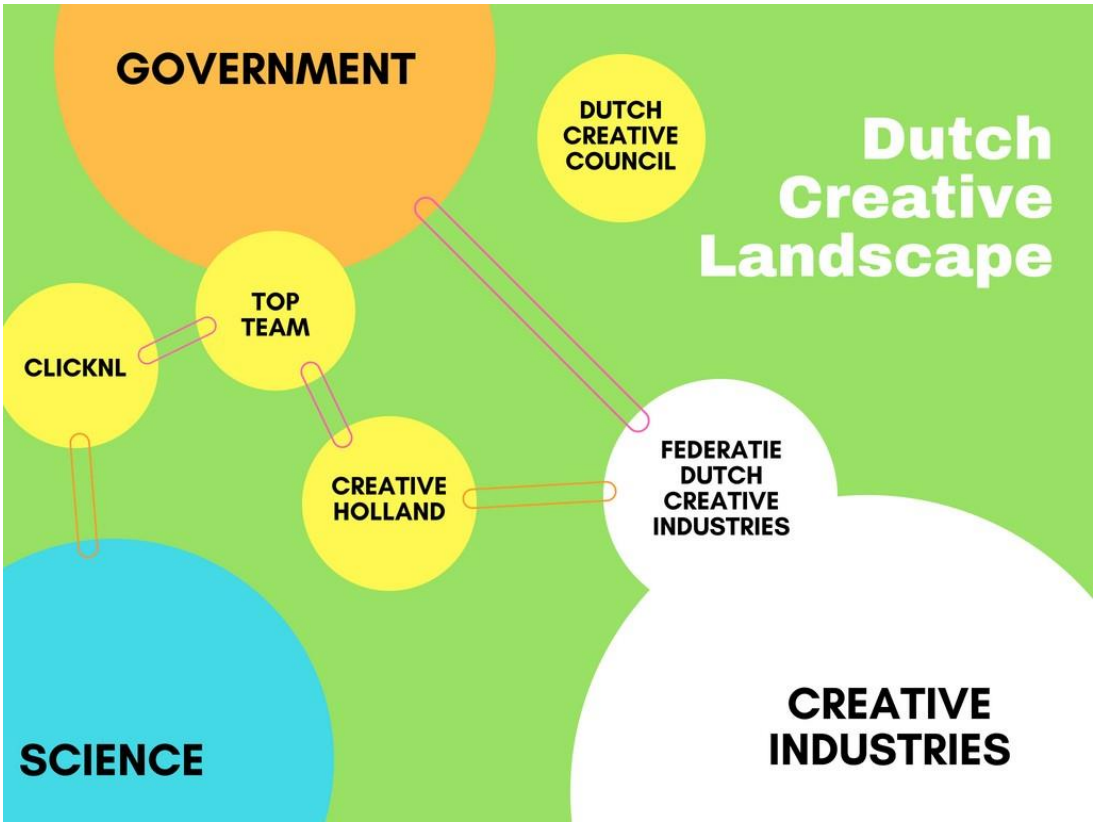


Figure 14. The Landscape of the Creative Industry. (Provided by Gerbrand Bas)

FOCUS: CLICKNL

CLICKNL (Creative Learning Innovation Co-creation and Knowledge NL) is the Dutch creative industries' knowledge and innovation network, connecting interested researchers and creative entrepreneurs. It is the link for the 'golden triangle': knowledge institutes, industry (SMEs companies) and the government. Together they work on sustainable solutions to societal and economic challenges (Bas interview, 2018).

CLICKNL was founded in 2012 and initially it coordinated six networks: Next Fashion, Design, Cultural Heritage, Media & ICT, Games and Built Environment. The Ministry of Economic Affairs provided funding of about 100 000 € per year per network, which had to be topped up by 50%. Depending on the networks the top-up funding came from public universities, organisations in the field (e.g. fashion associations), etc. There was no direct industrial funding by companies.

Tasks of CLICKNL include the development of a national knowledge and innovation agenda for the creative industries, and monitoring the progress and quality of its implementation. It identifies and initiates new forms of cooperation and creates crossovers. CLICKNL also acts as the national and international point of contact for all players that want to innovate in and with the Dutch creative industries. It also stimulates the smart use of practical policy instruments. It provides value to the sector by acting as an intermediary, enabling cross-sectoral activities and promoting the potential of the cultural and creative sectors for other economic sectors and society. As an organisation CLICKNL has no permanent employees, it acts as a consortium. It meets its expertise requirements (e.g. when a new project or programme is being prepared) by hiring the services of experts for the needed time. In this way, it remains flexible and ready for all challenges that lay ahead. (Ahsmann interview, 2018)

CLICKNL prepared the first Knowledge and Innovation Agenda (KIA - Kennis- en Innovatieagenda) for the creative industries in 2012. At the end of the first period (2012−2016), the results of evaluations (see also below) showed that in order to develop a multidisciplinary sector with real collaboration and not silos, the focus needed to shift towards technologies and methods rather than strengthening the organisation through networks, so a new strategy was set in place. This change in focus is also referred to as the 'Shift' (Janssen et al., 2017).

The first period was also used to identify needs, including the development of a solid knowledge base in the creative industries and ways in which this base might be further developed in the future to support real growth. CLIKCNL's current new agenda for the creative industries builds on the strengths of the creative economy: support for collaboration, future-orientation, strong direction and speed in addressing multi-stakeholder issues and challenges, and answering the need for a creative and human-centred approach. The new agenda also aims at reducing its weaknesses: R&D (transformative), funding and financial productivity, and human capital (see also below).

Along with the new agenda, CLICKNL has established a 21-member Program Board to address needed changes within the creative industries sector. The board, comprising researchers and entrepreneurs from the creative industry, will guide the continual development of the Knowledge and Innovation Agenda to strengthen the sector (CLIKCNL website).

Another important activity of CLICKNL is to support and oversee Field Labs that contribute to the creative industry. Field Labs are equipped spaces within a university or other knowledge institute with special infrastructure. Examples of Field Labs that CLICKNL supports are:

The CIRCO 'Creating business through circular design' project inspires and facilitates the manufacturing industry to 'Go Circular' using a circular design approach. Its mission is to make circular design the new default. In CIRCO, companies work together with designers to develop circular products, services and business models. They do so by sharing knowledge, experience and inspiration with their network.

The SAX (Spectacular ArenA eXperiences) programme develops innovative concepts to improve the experience and engagement of visitors and remote fans during large-scale events. It explores new spectacular forms of events and looks at how data generated by users and locations and events can be used to produce new services.

Field Lab UPPS (Ultra Personalised Products and Services) was created to stimulate innovation that capitalises on the opportunities of the fourth industrial revolution. Its ultimate objective is to create a Dutch industry in which personalised products are realised on a large scale. Its focus is on three key areas: sport, health and fashion.

The Virtual Worlds field lab uses virtual environments to solve societal challenges and to gain new insights and knowledge in the process, such as new forms of storytelling, 3D reconstructions, new ways of doing expositions and journalism and new experiences of spatial and industrial heritage.

Definition and composition of the creative industry in the Netherlands

An initial definition refers to the creative industries as non-subsidised creative services, although Cultural Heritage (which is subsidised) also belongs to the sector (Bas interview, 2018). The Top Sector Creative Industry initially included the stronger traditional networks of Media, Architecture, Design, Fashion, Gaming and Cultural Heritage (Ahsmann interview, 2018). Later the field was extended to include (Rutten et al., 2010):

- Media and entertainment (TV, films, games, radio)
- Creative services (fashion, architecture, advertising, etc.); includes a broad range of architectural services, from development architects, strategic architects, facilitating architects, etc.
- Art
- Digital design
- Advertising
- Cultural heritage

The new Top Sector Creative Industry agenda for 2018−2026 seeks to expand involvement in culture and the performing arts.

The Dutch creative industries rank among the world's top 10 for trade, jobs and brands. Dutch creativity also contributes to a more sustainable global society through, for example, the design and development of solar cars, self-healing concrete and recyclable phones. World-famous Dutch brands include G-Star, Sandwich, Gsus, MEXX and Supertrash. The Dutch gaming industry is especially strong in serious gaming and simulation.

A precise picture of the sector and the number of companies and employees is difficult to determine. It consists almost entirely of small organisations with between 20-100 employees, averaging 1.6 people per company. In 2015, the Dutch Creative Industries (Ahsmann interview, 2017):

- included 147,000 companies (10% of all companies in NL)
- provided full-time employment for 186,000 people (2.6% of all full-time employment in the Netherlands)
- had a revenue of 23 billion € per year, and
- turnover of 11.5 billion € (1.9% of GDP)

Funding agencies and support for creative industries schemes and programmes

The Dutch creative industries top sector has a number of financing resources that can be disposed of directly or through another party, using many different instruments that are described below.

Creative Industries Fund NL is the Dutch cultural fund for architecture, design and digital culture, as well as for cross-sectoral collaborations (Creative Industries Fund, 2018). The fund's grants and programmes are aimed at enriching the creative sector and striving through cooperation towards a culture- and knowledge-driven creative economy. The fund contributes to the formulation of broadly supported design solutions to societal issues.

The fund has an annual budget of about €15 million. The majority of this budget comes from the Ministry of Education, Culture and Science, complemented by a budget from the Ministry of Foreign Affairs for internationalisation, and a budget from the Ministry of Infrastructure and the Environment for three stimulation programmes − Innovative Forms of Commissioning, Healthcare Environments and Education Environments − within the Action Agenda for Spatial Design (Actieagenda Ruimtelijk Ontwerp). The fund thus operates within several policy contexts. It supports hundreds of projects in the Netherlands and beyond every year.[27]

Following its establishment in 2013, the Creative Industries Fund NL developed during its initial years a new model of practice for co-funding in association with designers, creators, institutions and civic partners. It set up a package of grants, which has since gradually been refined, to provide financial support for excellence within the disciplines of architecture, design, fashion, games and digital storytelling. The fund provides opportunities for support for talent development, artistic and professional development, practical enrichment such as research, experimentation, analysis and reflection, and for projects focused on social engagement and public activities. Presentation venues, cultural institutions and design labs can submit grant applications for their programming and collaborative projects.

MIT (MKB-innovatiestimulering Regio en Topsectoren - SME Innovation Stimulation Region and Top Sectors) is a scheme specifically aimed at SMEs. In 2015, 23 project proposals were funded within the national tender for a total amount of € 3.5 million. This made the creative industry the largest user of the scheme in that year, after the Top Sector High Tech Systems and Materials. The MIT scheme is implemented by RVO (Netherlands Enterprise Agency) (Janssen et al. 2017).

The *Creative Industry-KIEM* (Kennis Innovatie Mapping - Knowledge Innovation Mapping) programme is organised by NWO (Nederlandse Organizatie voor Wetenschappelijk Onderzoek - The Netherlands Organisation for Scientific Research) and focuses on the development of short-term fundamental or industrial research projects with the aim of encouraging partnerships between knowledge institutions and private partners. KIEM enables consortia (consisting of at least one private partner and at least one researcher employed at a Dutch University or another research institution recognised by the NWO) to develop sustainable partnerships focused on fundamental or industrial research. An important condition for the current call of KIEM is that applications fit within the framework of the Knowledge- and Innovation Agenda 2018-2021 of CLICKNL. The funding budget for such projects can be up

[27] Creative Industries Fund NL supports Dutch actors collaboration projects with other countries, and provides information for foreign companies and actors on creative industry in the Netherlands but do not provide funding for foreign actors.

to 15,000€. Private partners must contribute at least 20% matching funds, made up of at least half in cash matching funds.

SIIA_Raak: Nationaal Regieorgaan Praktijkgericht Onderzoek SIA provides funding for projects engaging in collaboration between knowledge institutes, companies and public professionals (7.2 million €/call 300,000 €/project) (SIA RAAK Grant 2018).

CRISP (Creative Industry Scientific Programme) aims to develop a knowledge infrastructure that will consolidate its leadership position as a pioneer research programme within the Dutch Design Sector and Creative Industries. CRISP focuses on the development of **Product Service Systems** and on generating and disseminating the knowledge, tools and methods needed to design complex combinations of intelligent products and services with a highly effective user experience. CRISP is supported by the Economic Structure Enhancing Fund (FES, ~22M€ over 4-5 years) from the Dutch government and a consortium of scientific and industrial partners. The CRISP programme period ended in June 2015. A follow up programme focussing on 'key enabling methodologies' to be funded by the NWO is in the pipeline.

As an indication of total funding, € 32 million of public funding has been made available for the period 2016-2017. In total, € 87 million is invested in knowledge and innovation together with knowledge institutions and companies. Outside of these resources, a contribution of approximately € 7 to 8 million is also made by the Het Nieuwe Instituut. However, a significant proportion of these funds also go to the cultural sector and these funds cannot be fully included in the resources of the creative industries top sector. (Janssen et al. 2017)

Field labs as innovation hubs

Field labs are practical environments where businesses and knowledge institutions develop, test and implement smart industry solutions in a targeted way and enable people to learn how to apply them. There are currently 39 field labs in the Netherlands, most with a regional focus and specialising in a wide range of areas. Field labs are places for the acceleration of innovation.

The field lab concept took root when the policy for German Industry 4.0 (fourth Industrial revolution) was adapted in the Netherlands as the Smart Industries Agenda (campaign) by FME (Fieldlab Sociale Innovatie - Social Innovation FieldLab), TNO and others for industrial SMEs. The ambition is to gain a strong position among the frontrunners of the smart industries and to make the industry more competitive through faster and better utilisation of the opportunities offered by ICT: capitalising on existing knowledge; accelerating in field labs; strengthening the foundation (Bas interview, 2018). Field labs are seen as smart hubs where multidisciplinarity is promoted, various stakeholders can meet, crossovers can be born, and innovation can happen. Field labs are usually fully private funded and managed by the partners and stakeholders.

Evaluation and results of the Top Sector Creative Industry

During the initial stage of Top Sector policy implementation the creative sector was highly fragmented. This fact combined with a lack of structure and coordination meant that there was limited attention to research and knowledge development. The creative industry saw itself as an engine for innovation in other sectors, but it still seemed to be insufficiently

aware that a knowledge base for the creative sector itself should also be developed. Due to the fragmentation within the sector there was hardly any question of demand management and demand articulation towards knowledge institutions and government. In an evaluation of key areas of the sector, inadequate relationships with knowledge institutions were identified as a fundamental bottleneck. Although there was collaboration with universities of applied sciences, the research was small-scale, fragmented and the contact with other knowledge institutions was limited. Cooperation with other sectors was also limited by the lack of structure in the creative industry. (Janssen et al., 2017)

Following the first period 2012-2016 of the Top Sector policy, a general evaluation provided insights on the various top sectors, as well as focused evaluations of the impact and productivity of the creative industry (Bas interview, 2018; Janssen et al., 2017; Buunk & Tieben, 2017; Goetheer & Heide, 2017). The main results and conclusions were:

The creative industry sector is innovative and can drive other sectors towards innovation

The creative industries can facilitate positive cultural changes externally and internally, for example, by changing the way a product is seen and by providing the energy and direction companies need to make breakthroughs. The creative industry also helps attract foreign collaboration and investment by projecting positive images of the economy, and enhances the fast adoption of technological achievements and solutions by reducing the risk of adoption. Creativity fosters intuition, which leads to innovation.

The Top Sector Creative Industry is still growing, but it is not as productive in numbers as other top sectors in the Netherlands

SEO (Stichting voor Economisch Onderzoek – SEO Amsterdam Economics) reports that *Top Sector Creative Industry* turnover in 2016 fell on the previous year, but profitability was stable or even higher. Cost control was achieved by lowering wages, something that does not necessary benefit the professionals of the creative industry. At the same time, it is not easy for small independent companies to secure competitive prices. The creative industry's output is not easy to measure, as it consists largely of knowledge capital and has a predominantly societal, not clearly financial, impact. IP benefits can be challenging, because the work of creative industry professionals is often an undistinguishable part of the services and products of other sectors to which IP benefits are unrelated. The creative industry produces added value for other sectors, but it does not see the same benefit. New business models are needed that will support creative industry professionals' rights and benefits more effectively (Buunk & Tieben, 2017).

The motives of creative industry professionals are often not financial, which can lead to a lack of entrepreneurship. Education and collaboration with other sectors could be a solution to this.

The creative industry sector is a mosaic of small SMEs (microSMEs), which presents challenges.

The sector consists of many micro-companies and freelancers, which presents organisational difficulties. CLICKNL played a vital role in organising these small fragments into a network and bringing in players from outside the sector (for exchange of knowledge through

communication and networking activities). The coordination of collaboration with other sectors (through crossover projects and programmes) and of internationalisation was deemed positive. Interaction between knowledge institutions and creative industry companies has been improved, but remains limited.

'Speaking with one voice'

The two manifestos of the Dutch Federation of Creative Industries demonstrate that organising the industry into a Top Sector helped it to start 'speaking with one voice'. The latest manifesto of 2016 outlines the important role of the creative industries in building a multidisciplinary approach to innovation on social issues, with the participation of all stakeholder groups. It urges action in three key areas: 1. Knowledge and innovation (by creating a bridge between research, creativity and entrepreneurship in field labs, and by professionalising commissioning), 2. Upscaling and internationalisation for start-ups and fast growing actors, and 3. Talent development and entrepreneurship, in order to develop needed skills. The development of these skills involves largely and will be supported by crossovers, which will be targeted at accomplishing urgent social tasks and increasing the strength and cohesion of the existing creative infrastructure, leading to the development of new solutions and revenue models (Second Creative Manifesto, 2016).

FOCUS: Crossovers

Crossovers are collaborations foreseen by the government between the nine Top Sectors:

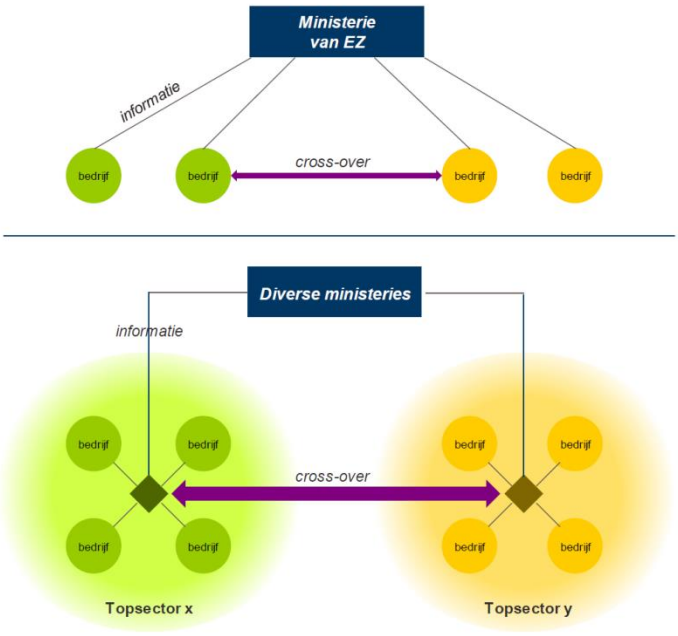


Figure 15. Differences between crossovers overseen by a single ministry (top) and system-like crossovers formed between Top Sectors with the participation of a diverse range of ministries (bottom).

After the new top sectors were defined in 2012 and they set out their roadmaps, it became possible to organise and implement crossovers. By 2014, 25% of all company projects

(R&D) were crossovers between the top sectors. One third of business participants were from outside the top sectors (Goetheer & Heide, 2017).

The lead organisations promoting crossovers to and from the Top Sector Creative Industry were Syntens (an innovation centre funded by the government), CLICKNL, the FDCI and the Creative Industries Fund NL (Crossover Works 1, 2016). The development and expansion of public-private partnerships, however modest in comparison with other top sectors, is one of the most important areas in which the Top Sector Creative Industries have taken steps. Through the KIA (Knowledge and Innovation Agenda), network activities and the use of funding and other routes, awareness was strengthened within the top sector that its added value must be derived from its use in other sectors. To this end, four crossover programmes were defined, namely Create Health, Create Energy, Smart Industries and Smart Retail. Each crossover was coordinated from one of the six CLICKNL networks, and was linked to another top sector, such as Life Science and Health or Energy. The crossovers found resources through MIT financing, TKI allowance and NWO contributions. CLICKNL is also looking for ways in which (existing) partnerships such as CRISP can continue. Ultimately, in 2015, the Ministry of Economic Affairs (EZ) and Education, Culture and Science (OCW) decided to submit 0.5 million euros on a one-off basis for Design for Effects (EZ 2016, OCW 2017) and to ask CLICKNL to develop new public-private partnerships (PPPs).

A wide range of successful and well documented crossover projects helped to convince policy makers and the other top sectors of the added value that the creative industry brings to them (Bas interview 2018; Ahsmann interview, 2018).

A platform to overview the crossovers consisting of the right public actors (ministries) was necessary for the crossover work to succeed, so that the various players could have a clear view of the relation of their own top sector to the other top sectors (see Figure 15).

The work done in the crossovers of the creative industry was published regularly by the Dutch Federation of Creative Industry. This action was funded by the Chamber of Commerce. The purpose was to communicate both nationally and internationally the added value that the creative industry can bring to other sectors (Bas interview, 2018). The Crossover Works series of publications convincingly communicated the enormous and implicit contribution of (disruptive) innovation to other top sectors and policy makers and emphasised innovation as a service with an end user centred or human approach.

Crossovers were one of the most successful activities of the Top Sector Creative Industry. They generated awareness of the value that the creative industry can add to other ‘more’ productive top sectors and enabled knowledge transfer between them. They also demonstrated that creative industry professionals can bring orientation and set the course for innovation and concrete solutions. Crossovers can also accelerate the development of top sector achievements, and are the basis for the new agenda for the creative industries.

Targeted spillovers were challenging

According to the evaluation, knowledge transfer took place within the creative industry due to the mobility of its workers and a degree of spillover from other sectors towards the creative industry. Spillover outward to other sectors did not however occur to any large extent.

This was due mainly to the fragmented structure of the creative industry, which made benefiting from new knowledge and networking more difficult for individuals and very small companies.

Knowledge and Innovation Agenda KIA becomes a common agenda

KIA formulated aspects known to be supportive of creative industries into a common agenda, providing a solid basis and support for crossovers and stimulating new 'hard' R&D. Investments in new R&D proved more beneficial than transformative research, and knowledge capital was increased (knowledge capital is analogous to creative capital).

Promising steps towards internationalisation

Crossovers have been a key factor in building cross-border collaboration and it has been especially successful in Germany.

FOCUS: Internationalisation

Internationalisation was one of the three main goals of the Top Sector policy of the Netherlands.

Long before 2012, the creative industry of the Netherlands was positioned among the top creative industries in the world. The Dutch Approach, a multidisciplinary method used by the Dutch creative industry in which collaborative, design-driven problem-solving is adopted and implemented, is an export product (The Creative Industry Illustrated).

The Top Sector Creative Industry goals for internationalisation were: talent development through artistic exchange and increased trade volume and foreign investment. Three ministries worked together with the RVO (Rijksdienst voor Ondernemend Nederland - Netherlands Enterprise Agency) to support creative industry internationalisation (Ministry of Economic Affairs, Ministry of Education, Culture and Science, and Ministry of Foreign Affairs) through diverse instruments and programmes. A good correlation between the instruments made them appropriate for the needs of creative entrepreneurs. The Creative Industries Fund NL supports designers, creative entrepreneurs, and cultural institutions with subsidies and programmes with a cultural or social goal as a starting point. Another organisation, the New Institute functions as a platform and expertise centre in the area of internationalisation (The Creative Industry Illustrated). CLICKNL is not focused on internationalisation, but acts as a contact point for potential clients outside the country and is active in the European Commission, exercising influence and promoting Dutch creative industry interests in Horizon 2020 and FP9. (Ahsmann interview, 2018)

A major achievement was the creation of the *Creative Holland* portal. The Creative #olland portal, launched by the Dutch Creative Council and managed by the FDCI, is a portal for creative entrepreneurs and businesses looking to internationalise, as well as for foreign missions and other parties seeking information on the Dutch creative industry. Creative Holland offers information on financing instruments, support options, best practices, and dos and don'ts. (The Creative Industry Illustrated)

The *Creative Industry Bureau* is the instrument coordinating internationalisation activities and the development and work of the Creative Embassies.

Creative Embassy is a collaboration concept based on reciprocity and knowledge connections. After internationalisation activities, such as trade fairs and missions targeting other countries, delivered no remarkable results in trade, the focus was set on Germany, and the first Creative Embassy between Amsterdam and Munich was born out of German industrial needs for design and creative insights (Creative Holland Portal). Munich was focusing on smart mobility, supporting disruption in the declining automotive industry, and this is where Dutch Creative Industries stepped in.

In addition to activities in the field of internationalisation, the top sector regularly publishes Crossover Works, a series of publications that provide insight into what added value the creative industry can deliver to other sectors. The publications are also produced in English and German and serve as a dissemination instrument for Dutch creative industry activities and the results of crossover projects.

The full potential of the internationalisation of the Dutch creative industry is still yet not fully exploited. The Creative Embassies concept will be extended to other countries, based on which a more permanent dissemination and trust relationship can be built with international partners. This concept will be developed together with other top sectors, thus generating further publicity for crossovers.

Other priority countries for internationalisation currently include the US and China. The Dutch creative industry has also set mission countries: the Baltics, France and the UK. Poland also shows promise as an internationalisation target for Dutch music industry exports, as a spinoff of activities in Germany. The creative industry is currently seeking to design processes to achieve these targets and nation branding for the Netherlands (Dubai 2020). (Bas interview, 2018)

Agenda for the future

After a 14-year consistent focus on Key/Top Sectors, the current government will, as of next year (2019), switch its focus to big societal issues. As the creative industries represent no value chain in itself, they will remain strongly focused on crossovers. (Bas interview, 2018)

Figure 16. What does the creative industry do? (Q&A Creative Industry)

The new agenda for the future of the creative industry and its new roadmaps is currently being developed. The basic logic on which the new agenda is being built is shown in Figure 17. Its foundation is the Knowledge and Innovation Contract, in which the government, knowledge organisations, the Top sector and CLICKNL agree on the ways in which interpretation will be given to research and innovation within the creative industry. It will lead to calls

for research by the NWO and SIA and will include new sectors of the creative industry, such as music and the performing arts. According to the agenda, the creative industry will create economic value by aligning technology with the values and interests of people and society, and will support transitions in other sectors (health, energy, social cohesion), having already demonstrated great potential in this area. The main pillars of the new agenda are shown in Figure 17 below.

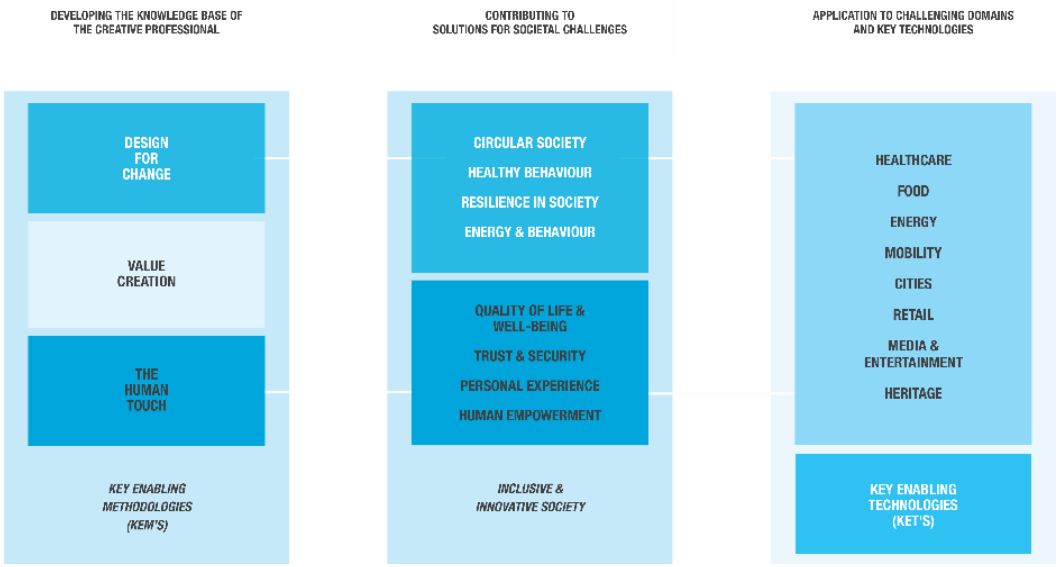


Figure 17. The new Knowledge and Innovation Agenda by CLICKNL and partners. (KIA 2018-2020)

The **knowledge base** for the future will be set through three roadmaps (KEMs, also known as Key Enabling Methodologies). KEMs are validated strategies, methods and models for impact realisation. The three roadmaps are:

- Design for Change: focus on designing disciplines and human behaviour; includes design for behavioural change and transition, methods for prediction and adaptation, and analysis of resistance to change and how to handle it.
- Human Touch: focus on humanities and computer science; includes data-driven design and the analysis of people's value systems and meaning making mechanisms.
- Value Creation: focus on exploring new design capabilities and business models from the perspective of organisational specialists and economists. It will also study and produce methods for determining the evidence-based impact of the creative industries and will include Art and Innovation.

The sectors and areas where the creative industry is expected to have a major contribution during the following period are:

- Circular Society
- Healthy Behaviour
- Resilience in Society
- Energy and Behaviour
- Quality of Life and Wellbeing
- Trust and Society

- Personal Experience
- Human Empowerment

The work will be done through public-private partnerships that will be facilitated by all members of the Top Team (Dutch Creative Council, Federation of the Dutch Creative Industries, Stimulation Fund Creative (fusion of cultural funds), Het Nieuwe Instituut (culture funds) and CLICKNL). Funding will be through the RVO, SIA, NWO, MIT (Ahsmann interview, 2018) and the Creative Industries Fund (mainly for architecture design and digital culture and all possible crossovers) and Horizon 2020, as well as FP9 (CLICKNL is currently involved in developing the related FP9 programme).

Internationalisation remains in strong focus and will be carried out and expanded to more countries through the Creative Holland portal.

3.4. South Korea

Introduction – Trade in creative goods and services in South Korea

South Korean popular culture, known as K-wave (Hallyu), and digital games have gained massive popularity in Asia and elsewhere since the late 1990s. The growth in South Korean content industry exports has diversified the country's industrial structure and added new nuances to an economy traditionally associated with manufacturing. The South Korean government has strongly supported the development and adopted a new policy paradigm calling for greater creativity and innovation – the core elements of the national 'Creative Economy' initiative launched by former President Park's administration in 2013. Creative economy in this context is used as an overarching concept with the aim to 'invigorate entrepreneurial activity in South Korea, increasing rates of business creation and the presence of fast-growing young and small firms' (OECD, 2015).

As depicted in Table 12, the creative industries' exports in South Korea increased at an imposing rate, rising from USD 4 119 million in 2003 to USD 10 420 million in 2012. Imports as well continued to grow attaining USD 15 776 million in 2012. Design, art crafts and new media were the leading sectors in terms of exports in South Korea in 2012 (see Figure 18). High level of domestic demand for creative contents has been a springboard for exports. South Korean consumers spend more per capita on virtual goods than anywhere else worldwide, and the video games sector has been a successful and growing field. (UNCTAD, 2016)

Table 12. Creative industries' trade performance (2003 and 2012). (UNCTAD 2016)

Republic of Korea	2003			2012		
	Value (in Million US$)			Value (in Million US$)		
	Exports	Imports	Balance	Exports	Imports	Balance
All Creative Industries	4,119.07	2,710.55	1408.52	10,420.66	15,776.67	5356.01
All Creative Goods	3,966.67	2,187.95	1778.72	5,762.96	6,018.37	255.41
All Creatives Services	152.40	522.60	370.20	4,657.70	9,758.30	5100.60

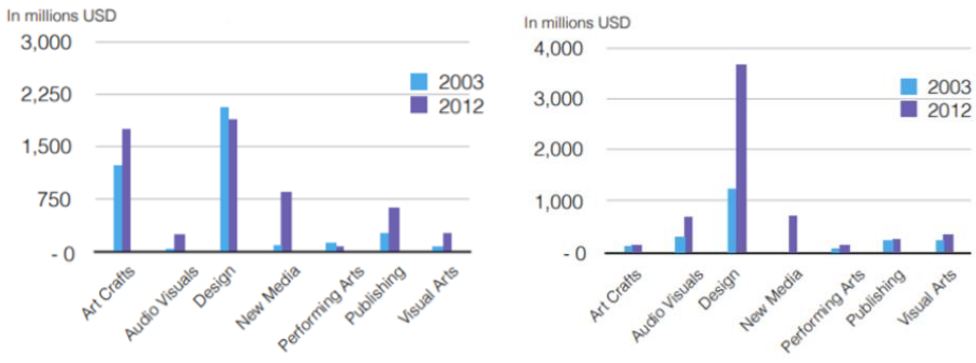


Figure 18. Creative goods exports (left) and imports (right) by product groups. (UNCTAD, 2016)

South Korea's export-led growth has been largely dependent on trade with developed countries such as China, the United States and Japan (UN report 2017; UNCTAD 2016). However, reliance on trade with advanced countries has declined steadily as commerce with developing countries has grown. In 2014, exports to China were USD 800 million, followed by the US (USD 790 million) and Vietnam (USD 707 million). Similarly, imports from China were USD 2 468 million in 2014, followed by Italy (USD 889 million), the US (USD 555 million) and France (USD 515 million). (UN report, 2017)

South Korean research organisation the *Hyundai Research Institute* published a study (in Korean) on the creative economy index in 2013. The objective of the study was to compare the creative economy capabilities between OECD countries (Jungwoo interview, 2018). In the study, researchers defined and selected 11 industries as creative industries in South Korea. They conducted an analysis using an input-output table of the Bank of Korea. Four variables of creative industries were computed and analysed: growth rate, value added, employment, and productivity (trade statistics were not dealt with in the analysis). The study came up with four key findings. The first was that the annual average growth rate of the creative industries in South Korea during 2005 to 2011 was 6.9%, which outpaced the growth rate of overall industries (6.1%) during the same period. The second finding was that the value added inducement coefficient (the effect on value added of change in demand) of the creative industries was 0.694 in 2011, which was, again, higher than the figure for industries overall (0.633). The third finding was that the employment inducement coefficient (number of employees per about $1million) of the creative industries was 13.4 in 2011, again higher than overall industries (12.3). The fourth finding was that productivity (value added per worker) of the creative industries was USD 55.9 thousand in 2011, which, once again, was more than that of overall industries (USD 51,5 thousand). **In conclusion, the report clearly indicated that the creative economy has been and will continue to be an economic engine for job creation and economic growth in South Korea**. (UN report, 2017)

The 11 industries covered in the study were (UN report, 2017):

- advertising
- architectural and engineering services
- arts and cultural services
- art crafts
- design

- publishing
- software and information services
- audio visuals
- recreational services
- R&D
- ICT

THE SOUTH KOREAN GOVERNMENT HAS DEFINED THE CREATIVE ECONOMY AS A NEW ECONOMIC STRATEGY THAT MAKES NEW INDUSTRIES AND MARKETS BY INTEGRATING IMAGINATION AND CREATIVITY WITH SCIENCE, TECHNOLOGY AND ICT AND CREATES JOBS BY REINFORCING TRADITIONAL INDUSTRIES (UN REPORT 2017).

Design of Creative Economy policy in South Korea – History

South Korea is a noted case of a successful economic catch-up, which was accomplished through a government-led, manufacturing and export-oriented strategy. South Korea is seen as one of the few recent examples of a country that has managed to swiftly transform its agricultural economy to the extent of becoming a leading industrial might. A substantial policy instrument in South Korea's successful catch-up has been multi-annual plans. From 1962 to 1992, the government established seven consecutive Five Year Economic Development Plans, which supported the creation of domestic capabilities. The Plans set explicit objectives and orchestrated actions across various fields, including industry and technology, trade, education and infrastructure. Each Plan identified major targets, introduced selective policies and directed resources to achieve them. (OECD, 2014)

In 1998, the country launched radical reforms in the fields of labour, business, government and funding when President Kim took office. South Korea also searched for new growth sources appropriate to the knowledge economy and the government extensively supported ICT and creative venture enterprises. (OECD, 2014)

One of South Korea's latest political plans has been the 'Creative Economy strategy', whose origin reaches back to the year 2004 and the increasing popularity of South Korean cultural products abroad. This resulted in the launch of the 'Creative Korea' concept by the South Korean government, led by President Roh Moo-hyun (2003–2008). The concept originated as a way of transforming the country into a knowledge-based economy (Ministry of Culture and Tourism, 2004). Naming creativity as the ultimate precondition for the national economy's productive capacity, the government first executed a detailed strategic plan 'C-Korea 2010', which aimed at endorsing copyright and cultural industries as incubators for the nation's new economy. At length, it promised to educate experts and develop marketing strategies as well as regenerate market dissemination and investment structures optimised for the creative industries through financing subsidies and by privatising governmental agencies so that the private sector could lead the development. Furthermore, it facilitated the convergence between information technologies and cultural products, calling these 'cultural technologies'. However, many of these schemes were either pushed aside or put on the back burner during the Lee Myung-bak government (2008–2013), since his political interests were concentrated more on developing green and internet technologies. (Kim, 2017)

Origins of the Creative Economy initiative

Kim (2017) describes how discussions regarding creativity gained real momentum when President Lee's conservative partner, Park Geun-hye (president during 2013–2017), took office. The Park administration settled on several schemes supporting the creative industries, believing that they would save the South Korean economy. Park defined the concept of creative economy during her inauguration speech in February 2013 as follows:

> *'The convergence of science and technology with industry, the fusion of culture with industry and the blossoming of creativity made possible by the breaking down of barriers between industries define a creative economy. It is about creating new markets and new jobs by building on the bedrock of convergence, going beyond simply expanding existing markets… Creative activities across a wide range of genres will be supported, while a content industry that merges culture with advanced technology will be nurtured. In so doing, we will ignite the engine of a creative economy and create new jobs.'* (Park, 2013)

Since the 1970s, South Korea's economic growth has been driven mainly by a handful of major corporations such as Hyundai, Samsung and LG. These big conglomerates, so-called chaebols, have been successful, but they have also dominated the economy giving very little space for SMEs to draw traction and grow. This dominance is most glaring in South Korea's R&D spending – the country devotes slightly over 4% of its GDP to R&D activities, more than any other OECD country. Nevertheless, in 2013 three-quarters of private R&D investments went to South Korean conglomerates and only over one fifth to SMEs. Ex-president Park Geun-hye wanted SMEs to have a bigger role. South Korean policy makers tried to tackle these obstacles by, for instance, loosening regulation, allocating a larger percentage of R&D funding to SMEs (around 53% of all government-funded business investment in R&D in 2013), providing tax incentives to firms providing funding to start-ups, and alleviating SME access to non-debt funding. (OECD Observer, 2016)

In 2013, South Korea also established the creative economy blueprint, 'The Creative Economy Action Plan and Measures to Establish a Creative Economic Ecosystem'. It was a strategy promoting the creative economy by utilising the country's science, technology and ICT capacity. The action plan established a vision for 'realising a new era of happiness for the Korean people through a creative economy'. The South Korean government set three principal goals (UN report, 2017):

- to create new jobs and markets through creativity and innovation;
- to strengthen South Korea's global leadership through a creative economy and
- to create a society where creativity is respected and manifested.

Institutional arrangements

Promoting public-private partnerships has served as a notable characteristic of the government's Creative Economy Action Plan, aimed at boosting the creative economy in South Korea. Establishing the new national strategy required private sector's active participation, as it could not be achieved by government efforts alone. The Creative Economy Action Plan reflected the government's efforts to gather opinions and receive suggestions regarding government tasks by private associations, including the Federation of Korean Industries, the

Korea Chamber of Commerce, the Korea Federation of Small and Medium Business, the Korea Trade-Investment Promotion Agency, the Korea Employers Federation, and the Korea Venture Business Association. (UN report, 2017)

In January 2014, the 'Creative Economy Joint Task Force' was set up to institutionalise the private sector's participation. The task force included representatives from venture companies, SMEs, large companies as well as the government and it was co-chaired by the Federation of Korean Industries and the Ministry of Science, ICT and Future Planning (from 2017 onwards Ministry of Science and ICT). The private sector was seen as a driving force leading the creative economy. In order to attract active participation from the public, the government created a web crowdsourcing portal 'Creative Economy Town' in 2013 (www.creativekorea.or.kr). Any citizen is able to access information on the Creative Economy initiative via this tool and receive support to commercialise creative ideas and start new companies. People with business ideas are able to access online mentoring consultation for different phases, such as feasibility studies, intellectual property guidance, marketing analysis and prototype development. In addition to business activities, citizens can also share their ideas inspired by daily life that are considered worthy of further development. The 'Idea Community' service is operated by the Creative Economy Town portal, where various experts and stakeholders are present. Anyone from the idea community service can publicly suggest ideas, exchange opinions, participate in evaluation and mentoring and, hence, be able to develop ideas based on collective intelligence. The ideas collected are provided to the government and businesses as measures to solve societal challenges, such as environmental or energy matters. (UN report, 2017)

The Ministry of Science, ICT and Future Planning and the Korean Intellectual Property Office (KIPO) signed a working agreement in September 2013 with the objective of turning creative ideas into intellectual property (IP), leading to the creation of new start-ups and commercialisation. According to the agreement, collaboration between the two organisations enables South Koreans with creative ideas, unique technologies or inventions gained through daily life or in business start-ups to easily and conveniently acquire IP rights (IPRs). The agreement was also designed to boost the overall quality of patents for greater efficiency in national research and development (R&D). Both organisations planned to prepare a large infrastructure to evaluate, manage, and use patents acquired during R&D in order to raise the overall quality of IPRs. KIPO built a detailed patent information system for the ministry to actively use in all phases of R&D projects. (Korean Intellectual Property Office, 2013a)

KIPO also initiated a project in collaboration with the Creative Economy Town to help clarify and develop the creative ideas submitted by the public into new start-ups and commercial products. Within two weeks of its opening, the Creative Economy Town gained popularity, receiving over 1 200 proposals for ideas from the public. KIPO's role has been to screen and evaluate the ideas collected from the Creative Economy Town to decide whether they comprise any technological innovations and have potential to become competitive in current markets. Through such processes, a decision will be made on the best ideas to support. A consulting team comprised of experts in the field of patent analysis, TRIZ, and technology commercialisation provides support for selected ideas for a one-month period in order to help develop the ideas and secure IPRs. (Korean Intellectual Property Office, 2013b)

Funding agencies and schemes to support the private sector

The strengthening the role of ventures and SMEs has served as a backbone of the Creative Economy strategy. According to the OECD (2015), SMEs have been regarded as even more important to South Korea than to most OECD economies. Lagging productivity, however, has impeded their overall contribution to economic growth in spite of significant state support. Access to finance has represented a major hindrance to the creation and enlargement of SMEs, especially young and innovative firms. The substantial government support for SME finance in South Korea during recent decades has focused on traditional debt, such as direct lending and credit guarantees, to the detriment of the development of market-based SME financing. However, bank lending has often been regarded as inappropriate for new, innovative and fast-growing firms. While bank funding is vital for many SMEs, more diversified alternatives have been required to promote long-term SME investments and alleviate entry and growth of innovative companies. (OECD, 2015)

One solution for better supporting start-up development in South Korea has been the establishment of the 'Banks Foundation for Young Entrepreneurs', also known as the Dream Bank, in 2012. A non-profit organisation funded by 20 different banks in South Korea, Dream Bank is often referred to as one of the biggest foundations in South Korea supporting start-up activities, with an asset base of about USD 470 million. Serving as a hub for the South Korean start-up ecosystem, the bank's mission is to nurture entrepreneurship among young generations in South Korea and Asia. It offers several tools, programmes and support systems, including quality infrastructure, and D.CAMP located at the heart of Seoul's Gangnam district. D.CAMP serves as a space for the most talented and passionate start-up entrepreneurs offering a 45,000 sq ft facility with co-working space, lounge, lecture rooms, event halls and dedicated offices for promising start-ups. (D. CAMP website)

Active government support via tax incentives and direct investments has contributed to a broad and expanding venture capital market in recent years, with venture capital investment increasing by 12.3% between 2012 and 2013 and by 18.4% between 2013 and 2014. In addition, angel investments, which fell by more than 90% between 2000 and 2011, have been growing lately due to policy initiatives. These include, for instance, greater tax deductibility of angel investments, creation of an 'Angel Investment Support Center' to facilitate matchmaking between angel investors and young companies, and the founding of a co-investment scheme (Angel Investment Matching Fund). Other policy instruments targeted at supporting alternative funding channels for new and growth-oriented SMEs include the introduction of a regulatory framework for crowdfunding, increased tax deductions for equity investments, the launch of the Korea New Exchange (KONEX), which is a dedicated platform for public listings for SMEs, and the introduction of facilitating measures (e.g. tax incentives and lighter regulation) for mergers and acquisitions involving start-ups or venture businesses. Moreover, the government has provided funds for investment and debt restructuring and expanded the scope of protected assets during bankruptcy in order to facilitate a second opportunity for entrepreneurs. Further improvement of access to equity finance for innovative start-ups and growth-oriented SMEs is needed to create a 'Creative Korea' and narrow the productivity gap. It is important to keep enhancing SMEs' ability to offer investor-ready projects, improve the entrepreneurial culture, and offer entrepreneurs a second chance after a failure. Other moves seen as significant include nurturing private sector participation in the venture capital market and raising the level of capital going into seed and early-stage funding (Jones & Kim 2014). (OECD, 2015)

Key actors

Key actors behind the Creative Economy initiative in South Korea were ex-president Park and her administration alongside SMEs and big domestic conglomerates, such as Hyundai-Kia Motors and Samsung.[28] An important factor regarding the launch of the Creative Economy initiative was the advancement of the South Korean innovation ecosystem's regional balance. As the majority of South Korea's industrial infrastructure, innovation resources and creative sector activity were located mainly in the metropolitan area, government wanted to nurture regional coverage through a new public-private initiative by creating 19 regional Centres for Creative Economy and Innovation (CCEIs) in 17 cities across South Korea in 2014. (Jungwoo interview, 2018) In the execution of the government's Creative Economy initiative an essential role was given to CCEIs. Local centres interconnect creative ideas, start-up hub activities, regional knowledge and talent base, as well as large businesses. Each centre oversees the realisation and diffusion of the Creative Economy at the local level, promotes the development of strategic local industries by matching them with large enterprises, and provides tailored support for talents and businesses. (Yoon, 2016)

The Ministry of Science, ICT and Future Planning (nowadays Ministry of Science and ICT) also played a fundamental role in the coordination of creative economy policies among South Korean ministries. It was created in February 2013 to set up and implement the Creative Economy initiative and included the Creative Economy Policy Bureau, which was exclusively in charge of Creative Economy affairs. The ministry was comprised of five divisions: Creative Economy Planning Division, Creative Economy Foundation Division, Creative Convergence Planning Division, Future Growth Strategy Division, and the Creative Economy Promotion Division. The ministry was assigned with turning the South Korean people's imagination and creativity into creative assets using ICT and science and technology, thereby generating new added value, new jobs and new growth engines that were seen necessary for the nation's sustained growth. (UN report, 2017)

Figure 19 shows the actors that were envisioned to be the most essential in implementing South Korea's Creative Economy initiative.

South Korea also has a dedicated agency, the Korea Creative Content Agency (KOCCA), for content promotion. It promotes and supports development of the country's cultural and content industries ranging from broadcasting, game, music, fashion, comics, animation and character licensing both domestically and internationally. It was initially established in 1999 as the Game Industry Support Centre, but its name was changed in 2012 as its mission had expanded and covered not only game but also other content (animation, cartoon, K-pop etc.) (UN report, 2017). KOCCA supports the emergence and development of new creative content ideas as specialises in cultural technologies and industry ecosystems. KOCCA contributes actively to policy development in the field of content industries, provides overseas expansion support and operates overseas offices in major global markets in order to support internationalisation and exports. Activities include, for instance, Content Korea Lab (CKL) centres open to people across the country, a training centre provided by the cel Academy

[28] According to interviews that were implemented for two South Korean experts in March 2018, Creative Economy is regarded as South Korea's former president Park Geun-hye's political slogan and a national brand. Currently, the concept of Creative Economy is facing serious problems since the former president got an impeachment in 2017 and was recently sentenced to 24 years in prison for abuse of power and corruption in a scandal exposing conspiring between political leaders and Korean conglomerates (The Guardian 2018).

('Creative Economy Leader') for content creators, and the incubation services of the cel Venture Complex for content start-ups. (KOCCA website)

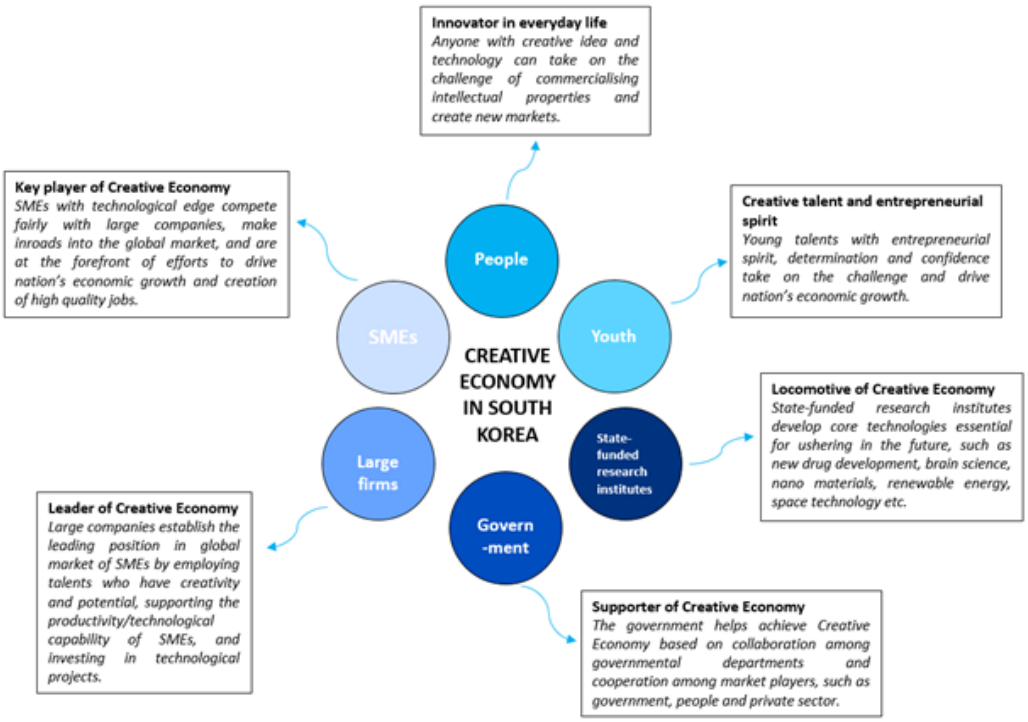


Figure 19. Key actors of the Creative Economy in South Korea. (UN report, 2017)

Centres for Creative Economy and Innovation

Centres for Creative Economy and Innovation (hereafter CCEIs) were established to underpin start-ups and SMEs across the regions in South Korea. Large companies with massive production and marketing capabilities as well as capital and technology were in an important position in facilitating the establishment of regional creative economy ecosystems in order to also supplement the weaknesses of each region (UN report 2017). Interviews implied, that focus areas of CCEIs vary markedly and not all of them are directly linked with creative industries as such. For instance, of the 19 regional CCEIs, four were directly set up to help start-ups develop in branches such as beauty, computer and video games, film and television, and tourism, which are all regarded as creative industries (Kim, 2017).

Each CCEI has different focus areas and company partners in order to maximise the resources, networks and markets already established in the surrounding region (see Figure 20). For instance, the Kyunggi Province CCEI is sponsored by KT Corporation, the biggest telephone company in South Korea. Its focus areas are the IoT (Internet of Things), games and financial technology. CCEI on Jeju Island concentrates on culture, software, IT and tourism, and collaborates with Kakao, the internet company that designed Kakaotalk (the most widely used instant messaging platform in South Korea). Kakao has its headquarters on the island. Other companies that have partnered with CCEIs to support rising start-ups

and SMEs include large conglomerates such as CJ, Posco, LG, Naver and Samsung. (Kyung Eun Park, 2016)

Figure 20. Centres for Creative Economy and Innovation. (CCEI website)

Anyone with creative ideas can visit a CCEI and receive support varying from product development and investment to pioneering new sales channels. The CCEIs serve as regional innovation hubs in building a systematic start-up ecosystem for large companies, SMEs and start-ups by utilising the skills and know-how of local governments, related agencies and citizens in the region. In summary, CCEIs play the following roles as regional innovation hubs (UN report, 2017):

- **Support the creation of new businesses:** by providing services in R&D, financing and marketing as well as financial, legal and patent consulting.
- **Promote SME innovation:** e.g. by providing support for technology transfer, development of business models and products, securing sales channels, and global market advancement.
- **Foster regional flagship industries based on regional traits:** by collaborating with various innovation agencies, universities and companies in the region.
- **Contribute to job creation:** by job matching between start-ups and young people from each region. Since late 2016, CCEIs have supported and nurtured 3 870 start-ups and attracted investments worth 432.9 billion KRW (approx. USD 400 million).

SUCCESSFUL CASE EXAMPLE

Korean start-up company Dot Incorporation developed the world's first smartwatch for visually impaired people. This could be regarded as a prominent success story of a collaboration between local Korean start-up and CCEI. Dot Incorporation first created the idea of making a braille smartwatch with support from Creative Economy Town (online portal) and Seoul-based CCEI. Center provided support such as intensive mentoring, prototype production and global market expansion to countries like the U.S. and Saudi Arabia. Dot Incorporation won the 'ITU Telecom World Entrepreneurship Awards' in 2015 and was awarded in the 'Get in the Ring 2016 Worldwide Final' (an international start-up Olympics). Due to these great achievements that led it to gain larger recognition from the international audience, Dot Incorporation has attracted 5,6 billion won investment and succeeded in signing export contracts worth 37 billion won with 10 countries globally. The company has also grown into a global venture and as well as a major exporter by combining the spirit of social contribution with innovative ideas. (UN report 2017)

Education

South Korea's educational system is undergoing transformational changes to prepare the next generation for a creative economy, which supports novel technological innovations and a convergence of various industries such as science, IT and culture. During the National Teacher's Day speech on May 2016, the former President Park remarked, that

> '*Our country's future depends on developing creative talents ... Just as we caught up quickly with developed countries through education in the past, we now need to lead changes in this generation through the power of education*'. (Kyun Eun Park, 2016)

The Ministry of Education in South Korea adopted 'The 2015 Revised National Curriculum' in 2015, which will be fully implemented by the year 2020. The main goal of the new curriculum is to cultivate a 'creative and integrative learner'. Whereas South Korea's earlier education system focused more on delivering standardised knowledge and rote learning, the new vision aims at advancing creativity and flexibility regarding how students address the new challenges of the 21st century. (Cho & Huh, 2017)

These advancements have led to a number of new initiatives. The new educational approaches have been regarded as significant changes in the South Korean education system, which is traditionally more known for high-stakes written exams, rote memorisation and lecture-style teaching. According to Kyun Eun Park (2016), experts have suggested that although the conventional educational practices have enabled South Korean students to coherently outperform their peers from many other countries in international standardised testing assessments (e.g. the OECD administered Programme for International Student Assessment (PISA) every three years), the vast pressure to succeed in the very disciplined and standardised education system has also made South Korean youth some of the unhappiest young people in the world. South Korean adolescents ranked last place in 2016, and 19th out of 23 countries in 2015 in the OECD Better Life Index of self-reported measures of

happiness. The current aspiration is that educational reforms will help improve students' socio-emotional well-being, allow them to better explore their passions and interests, and prepare them for the creative economy. (Kyun Eun Park, 2016)

Free Semester Program

The Free Semester Program (FSP) was adopted as a policy by ex-president Park after she assumed her presidency in 2013. The aim of the programme was to help develop competencies for the future such as creativity, problem-solving skills, social-emotional skills, and to advance a happy education that will help students build their dreams and talents (Kyun Eun Park, 2016). The objectives were designed to reduce students' stress related to exams and help them to acquire life values and engage in different activities, including searching for a career. During the free semester, students attend 'departmentalised classes' where they participate in debates, experiments and practices and learn project management skills. Students also take part in various free-semester activities, including career development, selection of subjects, art education, physical education and student clubs. Following a positive response to the initial launch of the FSP in lower secondary education, the programme was extended in 2015 to cover 80% of lower secondary schools (2,551 schools, far higher than the original target of 1,500 schools). By 2016, it was introduced to all 3,213 middle schools in South Korea. Contentment surveys have indicated that students, parents and teachers have all regarded the FSP as a positive change (OECD, 2016). This is not, however, the first time that educational reforms have been introduced; in 2009, the 'Creative Experimental Activity' was presented in middle and high schools for 3-4 hours a week to add fun and engaging alternatives to lecture-based teaching. Sports offerings were raised with the addition of the 'Sports Club Activity', and other curriculum changes were also introduced to expand career and course work planning. A major change in school assessment methods during the FSP has been the substitution of mid-term and final written examinations with more varied forms of assessment, such as presentations, portfolios and essays (Kyun Eun Park, 2016).

Software Education

Software Education, defined as 'education in ways of thinking that enable students to express creative ideas through software', was introduced as part of the government strategy to implement a software-centred society, announced in July 2014. Since 2014, selected elementary schools have pilot tested Software Education as Software Leading Schools or Software Research Schools. The selected schools are required to teach at least 17 hours, and middle schools at least 34 hours of software-related curriculum per year. High schools are required to teach software-related topics through the existing 'Information' elective course (Ministry of Education, 2015). They are also encouraged to offer possibilities to engage in software education through student groups, the FSP, and voluntary possibilities. Each selected school receives on average KRW 10M (USD 8 500) in funding. In 2016, 682 additional schools were chosen as a Leading or Research School, bringing the total to 900 schools participating in 2016. The Ministry of Education and the Ministry of Science, ICT and Future Planning revealed in 2015 an extensive plan to present Software Education at all levels of education, from elementary to high school and even at the college level. (Kyun Eun Park, 2016) Software education became compulsory in middle schools from the beginning of the first semester in 2018, in elementary schools from 2019 and will become compulsory in all grades in 2020 (Ministry of Education, 2018). Training at the elementary level is especially critical to the success of this policy as elementary school teachers teach all subjects

and there are no separate IT/computer teachers. (Kyun Eun Park, 2016; Ministry of Education, 2015)

STEAM Education

The South Korean government has driven the STEAM (Science, Technology, Engineering, Arts, and Mathematics) education policy since announcing 'The second basic plan to foster and support human resources in science and technology (2011-2015)'. As the most representative national institution for STEAM education, the Korea Foundation for the Advancement of Science and Creativity (KOFAC) has managed STEAM education programmes at the national level. In order to help STEAM education become more well established, KOFAC has, for instance, reinforced teachers' capabilities, developed and distributed content, advanced interactive and exploratory activities for students, as well as institutionalised and built infrastructure. (Hong, 2017)

The objective of STEAM education is to help students to develop stronger skills in mathematics and science while also equipping them with better artistic sensibilities (Ministry of Science, ICT and Future Planning 2015). International studies such as TIMSS (Trends in International Mathematics and Science Study) and PISA (Programme for International Student Assessment) have shown that South Korean students indicate high performance but low interest in science and mathematics. Additionally, the number of highest ability students entering universities to study natural sciences and engineering has decreased in recent years. In response, STEAM Education was designed to raise students' interest in and understanding of science and its application by focusing on linking science with other disciplines, including the arts, and solving day-to-day problems. (Jho et al., 2016)

Challenges

According to the South Korean expert interviews, there have been a number of challenges in executing the CCEI concept, as the large South Korean conglomerates involved were initially 'pushed' into CCEI collaboration by administration. This resulted from the South Korean administration's emphasis and adherence to a traditional top-down approach in its policy making and in the operation of national programmes. The overall ambition of the previous government's CCEI concept was to advance collaboration between large conglomerates and SMEs as well as start-ups, as conglomerates were seen as able to provide global networks and distribution channels for smaller actors.

The interviewees stated that collaboration has not, however, been working as intended, as most of the conglomerates were not interested in CCEI activity or collaboration with smaller companies. According to the interviewees, on one hand, the provision of financial support for SMEs was regarded as the only means of cooperation in which certain conglomerates were willing to engage. On the other hand, SMEs viewed collaboration with conglomerates as invasive. Nonetheless, in order to comply with the previous administration's regulations, the conglomerates have made extensive investments in regional innovation centres (CCEIs) and participated to a varying extent in cooperation with SMEs and start-ups. (Jungwoo Lee interview, 2018)

Despite the close interaction between the government and conglomerates in the South Korean administrative environment, the administration and CCEIs are now at a transitional

stage (following the corruption scandal of the previous president) and the relationship between the conglomerates and the government is currently unclear. As mentioned in the interviews, the conglomerates may no longer wish to collaborate with the government in the previous manner.

Following the emergence of severe political problems related to ex-president Park's corruption case, the current government does not want to be associated with the previous administration's policies. However, according to interviews, the current government is still seeking to implement similar measures to the former government's Creative Economy initiative. The Fourth Industrial Revolution, the new national agenda, seems to be similar in content to the Creative Economy initiative, albeit different in name.

Another criticism of the CCEI concept according to the interviews is that the general public was unaware of what the CCEIs are or how they operate. The original starting point for the Creative Economy initiative was to actively engage citizens in jointly and creatively building a better country, as the people were seen as an engine of idea creation. However, this target remained undelivered and a bottom-up approach did not succeed as wished according to the interviewees.

The CCEIs also face challenges with respect to regenerating their core businesses. The interviewees stated that, currently, many CCEIs are required to implement reforms and adapt to changes in operation and funding environment. For instance, the main focus of the Samsung-supported Daegu CCEI has shifted from a strong textile and electronics industry towards the IT industry, such as developing drones and robotic technology. In conjunction with the CCEIs' core business transformations, also their funding sources are in a state of change, with financing becoming increasingly dependent on the private sector and local government as central government funding for CCEIs continues to decline year on year. In addition, the abolishment of central government CCEI committees means that the CCEIs need to restructure and create independent committees and start applying for funding from local governments.

The interviews also revealed, however, that some CCEIs located in big cities such as Seoul, Daejon and Busan have succeeded and produced a good number of positive outcomes. Many events, such as start-up competitions and seminars, have been organised around the centres, to which people gather to benefit from different services. The interviewees also mentioned that the majority of the CCEIs have organised only a very limited number of such participatory activities, and that '*the intention of the CCEI concept is good, but the reality looks very different and CCEIs are regarded more like a government show-off*'. The South Korean government has been proud of the creation of the 19 CCEIs, but, according to the interviewees, they are, however, not working as effectively as they were intended.

A positive consequence of the transition caused by the administrative problems is that South Korean local governments have recently stepped up, strengthened and become more aware of their role in furthering regional development activities. Local governments have traditionally been somewhat defensive and weak, relying mainly on central government. According to interviews, decentralisation is on the new administration's policy agenda and local governments have *'a chance to promote their brainpower'*, creating space for local actors to be more active. The current government wants to utilise the legacy of the former administration and, thus, the CCEIs are being exploited as a resource and engine for regional development.

3.5. Lessons learned from the country benchmarks

The core features of creative industry identified in each of the benchmark countries provide the basis for good practices and lessons to be learned by Finnish policy makers in outlining policies and measures to support the embedding of creative competencies in Finland's creative economy. Figure 21 shows a scheme of the benchmark characteristics per country and the learning and good practices derived from them.

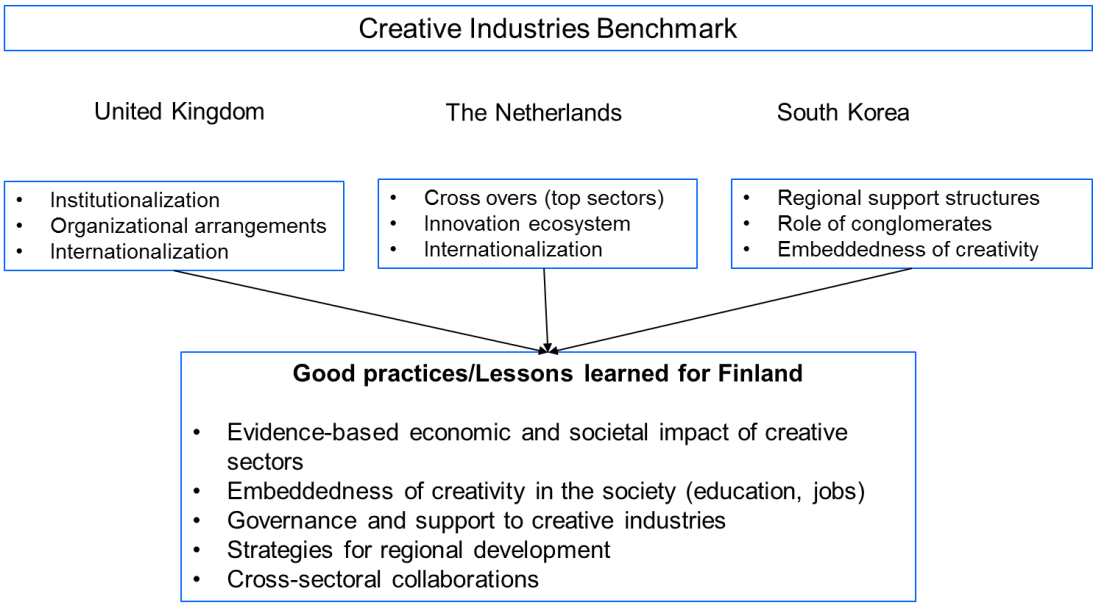


Figure 21. Benchmark features and the learning and good practices derived from them.

General lessons

The lessons, translatable into good practices, that emerged from the UK, Netherlands and South Korea benchmarking and how they support the provision of recommendations for the Finnish creative economy are further explained in Chapter 4. The following presents a summary of the lessons learned and how they were observed in the countries studied.

- **Legitimation of creative economy**. In the case of the UK, the main lesson to be considered is that the use of robust and transparent ways of defining, classifying and measuring new and rapidly evolving sectors of the economy has contributed to their being recognised and legitimised by policy makers, suppliers, educators and investors. As emphasised by Bakshi (interview, 2018), it may turn out that the development of a rigorous mapping framework is one of the primary ways in which governments can support new industries, approaching mapping as a means to promote innovation policy. Legitimation of the creative industry may start on the initiative of policy makers and politicians, as was the case in the Netherlands and force stakeholders into organising themselves, so as to provide an interface with the government and fully exploit the intended support.

- Following legitimation, the creative economy needs a **champion**, an organisation or group of organisations, especially belonging to the government but working together with industry, to be the champion for the implementation of a country-wide initiative related to creative economy. For the UK, this emphasis is provided especially by the DCMS, CIC, Nesta. In the case of the Netherlands, the FDCI acted as a champion, by initiating the founding of the necessary bodies (Dutch Creative Council, CLICKNL). Together with them, and with support from the Top Team, change was made possible. In the case of South Korea, the government was active initiator and started the creative economy programme in order to advance the creative economy and regional innovation ecosystems throughout the country.

- **Regional development**: although there is a tendency for creative industries to concentrate in metropolitan areas, alternative examples were seen related to the mapping of creative clusters (e.g. in the UK) and activities aimed at strengthening regional development by supporting creative industry businesses. In that regard, the role of universities and other agencies in promoting collaboration within and among creative industries and other sectors was seen as paramount for regional development. In the case of South Korea, the government initiated actions to advance creative economy and regional innovation ecosystems throughout the country; the government wanted to focus on developing regions comprehensively and thus initiated a collaboration with South Korean conglomerates by creating 19 regional CCEIs in 17 cities across South Korea in 2014. A major role was given to CCEIs as these local centres interconnect creative ideas, start-up hub activities, regional knowledge and talent bases, as well as large businesses. Centres oversee the enforcing and diffusion of the creative economy at the local level, developing local industrial infrastructure and innovation resources by matching them with large companies. In the Netherlands, the regional aspect was brought by the pre-established knowledge Institutes (Arnhem University of Arts for Fashion, Design Academy Eindhoven, Rotterdam Academy of Architecture and Urban Design), which acted as centres for the creative industry sectors they represented. However, as the Netherlands is a compact country, the regional policies are not as strong as in other countries.

- The **role of the private sector** has been emphasised in many instances for the development of policies, growth and internationalisation of creative industries. In the UK, it is worth mentioning the active participation of industry in the elaboration of strategies to support the creative industries, as well as its participation in those organisations that voiced the industries' needs, such as the CIC and the Foundation (CIF). In South Korea, the private sector (start-ups and SMEs in particular) was seen as a driving force for the implementation of the Creative Economy initiative; CCEIs and the online portal Creative Economy Town (for example, access to information on the creative economy, receive online mentoring consultation on commercialising creative ideas, starting new businesses, etc.) served as practical tools to engage companies and citizens to participate in building the creative economy. Crossover work between private companies and the Creative Sector was happening in the Netherlands previously (e.g. Philips and Design), but after the years of the Top Sector policy and the dissemination and evaluation of the work done in other top sectors, two things happened: 1) the companies of other top sectors realised the real added value

brought by the creative industry and 2) the creative professionals themselves realised their economic potential. The steps taken in the next agenda are aimed at piggybacking on these realisations.

- Active government **financial support** for the private sector is important, be it via tax incentives, direct investments or sharing risk with investors in the case of venture capital, amongst others. The UK had a more diverse structure for funding the creative industries, noteworthy among them being the government funding schemes carried out by the HMRC and investments from the National Lotteries, which were implemented by different agencies in support of the creative industries, especially for skills development, such as Creative Skillset, which is to implement the BFI's strategy. The UK has ensured good access to finance for all of its creative strategies, primarily by government-led organisations. The South Korean government has contributed to broadening and expanding the venture capital market in South Korea. The country has modified its legislation from a loan-based structure to an investment-based structure in order to take into account the high-risk and high-reward nature of start-up businesses. Angel investments (that fell by more than 90% between 2000 and 2011) have also grown lately due to policy reforms. In the Netherlands, financial support was provided through several programmes and budgets (e.g. from different ministries) but were coordinated by the appropriate bodies (e.g. CLICKNL). One important common characteristic of the funding programmes was that the provided funds had to be topped up by other means, which resulted in commitment on the part of the associations and other representatives of the creative economy sectors.

- **Educational reforms** are addressed here as a means of embedding creativity into society as a whole. This refers primarily to the South Korean case, as it was not explored in depth in the other benchmark countries. It refers to the implementation of 'the 2015 Revised National Curriculum' in South Korea, whose main goal is to cultivate a 'creative and integrative learner'. The new curriculum includes, for instance, the Free Semester Program (pilot programme in which one semester is kept free of regular exams and devoted to developing students' competencies for the future, such as creativity, problem-solving skills and social-emotional skills) and Software Education (software classes will become compulsory in all grades in 2020). Another major educational reform is the STEAM (Science, Technology, Engineering, Arts, and Mathematics) education policy, which has been active since announcing 'The second basic plan to foster and support human resources in science and technology' by the government (in 2011-2015).

- Promotion of **cross-sectoral collaboration** has been a means of strengthening the impact of the creative industries in the economy and society by adding value to products and services. In the UK, many activities aiming at promoting regional development were coupled with cross-sectoral collaboration and strengthening of creative clusters. For the Netherlands, crossovers were one of the most successful activities of the Top Sector Creative Industry. They raised awareness of the value that creativity can add to other top sectors and enabled knowledge transfer between them. They showed that the creative industry professionals can bring orientation and set the course for innovation. They can also accelerate the development of top sector achievements. Cross-sectoral collaboration is the basis for the new agenda for the creative industries in the Netherlands. The collaboration of the ministries and public

funding was essential for the success of the crossovers. In South Korea, the idea of convergence was at the heart of the Creative Economy Initiative and referred directly to increased collaboration and fusion of activities across and beyond the traditional sector and industry boundaries.

The lessons from the benchmark countries and their mechanisms of implementation are summarised in Table 13.

Table 13. Summary of good practices from the benchmark countries.

Topic	United Kingdom	South Korea	The Netherlands
Definition of creative industries	Originally, in 1998, conceived as 'those industries which have their origin in individual creativity, skill and talent and which have potential for wealth and job creation through the generation and exploitation of intellectual property'. A broader definition has been proposed 'as those sectors which specialise in the use of creative talent for commercial purpose' (Bakshi et al. 2013a:13). The industries are: advertising, architecture, arts and culture, craft, create, design, fashion, games, music, TV and film.	No official definition of creative industries by the South Korean government according to the UN report (2017). But, according to the South Korean Hyundai Research Institute the 11 creative industries are: 1) advertising, 2) architectural and engineering services, 3) arts and cultural services, 4) art crafts, 5) design, 6) publishing, 7) software and information services, 8) audio visuals, 9) recreational services, 10) R&D, 11) ICT.	Abstract definition: Creative industries are non-subsidised creative services, although *Cultural Heritage* belongs to the sector as well. Concrete: -**Media and entertainment** (TV, films, games, radio) -**Creative services** (fashion, architects, advertisement etc.); especially the architectural services can vary today between development architects, strategic architects, facilitating architects etc. -**Art** **-Digital Design** **-Advertising** -**Cultural Heritage** (to be expanded during the new period)
Size[29]	The (GVA) of the UK creative industries was provisionally estimated at £91.8bn in 2016. Export: £21.2bn of services in 2015. The UK creative economy comprises jobs in the creative industries and creative jobs which are in non-creative organisations. It	Exports of creative goods of South Korea amounted to USD 5796 million in 2014. Imports of creative goods were USD 6075 million. The trade balance was USD 279 million in 2014 (UNCTAD does not have any data available for the following years) (UN report 2017).	In 2015, the Dutch Creative Industries: -included 147 000 companies (10% of all companies in NL) -provided employment for 186 000 persons full time (2.6% of full-time employment in the Netherlands) -made revenue of 23 000 000 € per year and a turnover of 11.5

[29] There is no universally accepted definition nor listing of the activities that comprise the 'creative industries". Therefore, the figures given does not allow direct comparisons across countries.

	comprises an estimated 3.04m jobs or 1 in 11 of all UK jobs. 284,000 businesses operate in the sector.		million € (1.9% of the GDP)
Spatial distribution	47 creative economy clusters distributed across UK. Most of the activities are located around London, South East and Manchester areas.	19 CCEIs located in 17 cities across South Korea to distribute benefits as creative business activities have been concentrated in and around the capital region.	Some regional specialisation exists with 3 strong centres in Arnhem (Fashion), Rotterdam (Architecture) and Eindhoven (Design Academy). In general activities are concentrated in major cities around the country, with a strong centre in Amsterdam.
Embeddedness of creativity in society	All the policies addressing creative economy have provisions related to education and skills development. Focus mostly on employment and formation of professionals for the industry.	New revised curriculum in 2015 with several education initiatives and reforms, Creative Economy Town portal.	Education in the main knowledge centres (Eindhoven, Arnhem, Rotterdam) The Dutch Approach of co-creation including all stakeholders.
Institutions	Main organisations are in charge of policies, most important incl. the Department for Culture, Media and Sport (DCMS), the Creative Industries Council (CIC) and the Creative Industries Federation. CIC has been issuing strategies in support of the creative industries.	Ministry of Science, ICT and Future Planning in charge of driving the Creative Economy strategy.	Top Team Creative Industry representing the golden triangle/triple helix approach bringing together business, knowledge institutions and government FDCI DCC CLICKNL
Internationalisation	An internationalisation strategy is in place and the topic is also covered in other strategies. Main organisations in charge: DCMS, CIC, CIF, the British Council and UK Trade and Investment (UKTI).	KOCCA (Korea Creative Content Agency) is the leading government agency that contributes actively to policy development in the field of content industries, provides overseas expansion support and operates overseas offices in major global markets in order to support internationalisation and exports.	Goals of internationalisation: Talent development through artistic exchange, increasing trading volume and bringing foreign investment. 3 ministries in charge plus the Creative Industry Fund NL Results: Creative #holland brand, Creative Holland portal, Creative Embassies and Creative Bureau
Funding schemes	Tax relief mechanisms for cultural and creative industries and the Enterprise Investment Scheme (EIS) for raising venture capital, both run by the Her Majesty's Revenue and Customs.	Dream Bank, KONEX (Korea New Exchange), Angel Investment Matching Fund	Various instruments and schemes

	Funding from national lotteries, e.g. to support the British Film Institute (BFI), the Creative and Cultural Skills (CCS) and the Arts Council of England. Other funding sources: British Business Bank, Angel Investors (such as Creative England Trade Company), The Arts and Humanities Council. At European level: Creative Europe and European Regional Development Fund.		
Innovation support centres	Digital Catapult Innovation Centres focused on advanced digital technologies. The KTN facilitates innovation by connecting companies and individuals to universities and providers of knowledge and solutions for product development. Role of universities is emphasised in promotion of creative clusters.	19 CCEIs, Content Korea Lab (CKL) centres across the country, cel Venture Complex, D.CAMP	Field Labs Various programmes mainly through CLICKNL
Cross-sectoral collaboration	Strategy for sectoral collaboration and experiments, e.g., in health technologies. Also, as an example, the Knowledge Transfer Network (KTN) supports cross-sectoral collaboration.	Vision behind the Creative Economy Initiative underlined convergence. In practice, though, each CCEI has mainly focused on a certain industry. The objective was to discover region-specific development models with support from the central government and conglomerates.	Very strong: it will be the focus for the new period. Main other Top Sectors for crossovers: Life Sciences, Energy, Logistics, High Tech (ICT)
IPR and business models	IP protection is treated as a transversal topic and strongly emphasised in strategies that support creative industries.	The Ministry of Science, ICT and Future Planning and the Korean Intellectual Property Office (KIPO) signed a working agreement in September 2013 with an objective of turning creative ideas into IP, leading to the creation of new start-ups and commercialisation.	IPR regulated by European and Dutch law. It is not easy for creative industry to benefit from IPR, since the creative product is often embedded in products and services and it cannot be measured. New business models are needed.

4. RECOMMENDATIONS

In this concluding section, we outline recommendations based on analysis of material collected during the project and findings of the international benchmarking. The recommendations focus on two main areas for development: supporting the use of creative competencies and ecosystem development in a cross-sectoral context and improving the collection of information on creative activities.

The recommendations in support of ecosystem development are grouped into five interlinked development areas, which we present in section 4.1, while section 4.2 concentrates on the availability and relevance of data on creative activity and makes recommendations for improving and systematising the collection of quantitative and qualitative information. Figure 22 summarises all of the recommendations discussed in detail in this chapter.

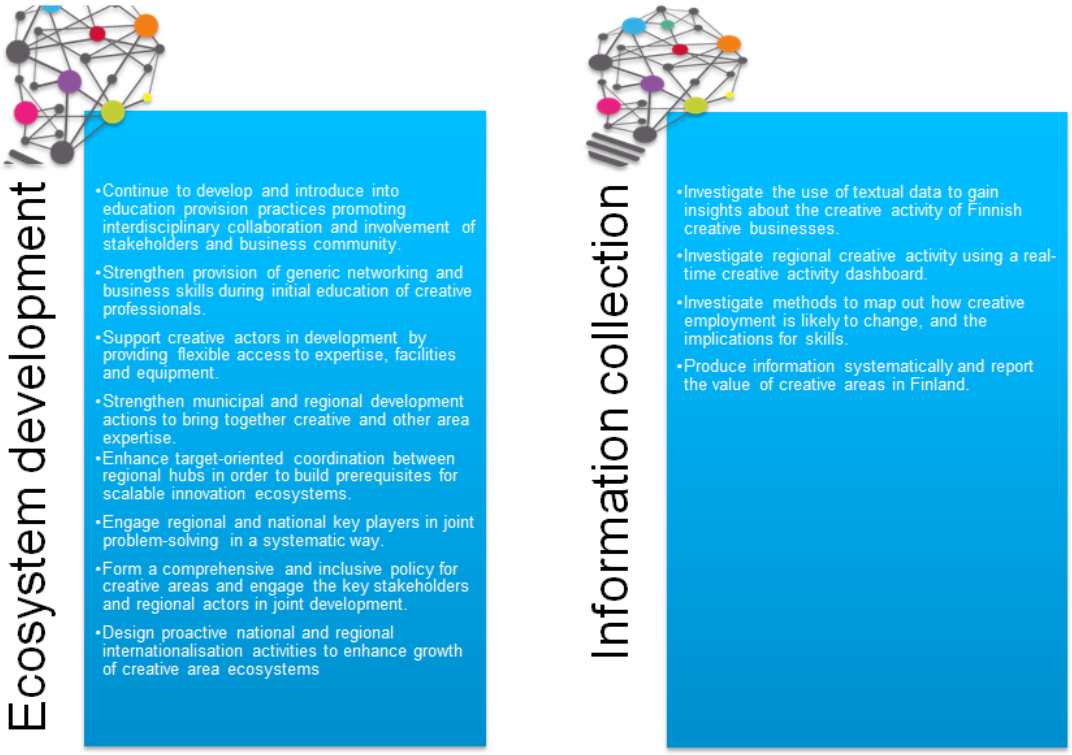


Figure 22. Summary of recommendations.

4.1. Recommendations for supporting ecosystem development in a cross-sectoral context

1) Strengthening cross-sectoral and interdisciplinary elements in education and working life

It is important to continue and strengthen the use of interdisciplinary and cross-sectoral modes of education in Finland. Education has a crucial role to play in creating the preconditions for the cross-fertilisation of ideas and the emergence of linkages across sector boundaries and between business and education – thus, supporting creativity and innovation. In addition, the lessons learned from international benchmarking emphasise the importance of education in embedding creative competencies broadly into society. For instance, the national curriculum reform and attention given to science, technology, engineering, arts and mathematics (STEAM) in South Korea aims at supporting cross-disciplinary and practical problem-solving skills development early on. Education provides a natural setting to develop and harness students' skills and capabilities. It also contributes to an open mind-set and attitude towards collaboration between actors from diverse professional backgrounds and sectors.

Recommendation: Continue to develop and introduce into education provision practices promoting interdisciplinary collaboration and the involvement of stakeholders and the business community.

The use of teaching methods that develop problem solving skills and involve the engagement of stakeholders and companies in practical ways create preconditions that nurture a crossover-friendly mind-set among the involved parties in the long run. Opportunities to engage and experience collaboration while studying prepare students to work in cross-sectoral environments and to develop solutions to concrete problems in interdisciplinary teams. Students learn simultaneously to identify needs and to 'market' their skills and expertise to each other. The engagement of students with other students from different disciplines also fosters the development of a 'common language', something mentioned in the interviews as being a hindrance to cross-sectoral collaboration.

There are already a number of good examples of integration of practice-oriented competency-based methods and approaches into programmes and course offerings at Finnish higher education institutions, but systematic efforts are needed. Universities and universities of applied sciences have set up labs and factories, such as the Design Factory at Aalto University, which integrate a physical space with the aim of encouraging interaction between students, researchers and industry professionals. At the regional level, Finnish universities of applied sciences, in particular, have actively looked for practical methods to increase cross-sectoral collaboration and use of creative competencies in the wider economy. Often development and testing of arrangements for promoting collaboration between educational institutions and actors presenting different sectors are organised on a project basis using such funding sources as the European Social Fund (ESF). An interesting current example of this kind of project is the IRM-Tool project, which focuses on developing a tool facilitating the use of creative knowledge in concrete problem solving situations in the maritime indus-

try. Another ESF funded project, Design or Die - Creative Value Creation and Competitiveness, aims at strengthening cooperation between different operators within the creative sector by utilising their knowledge of multidisciplinary modes of operation.

While providing students with creative skills, education should also offer them outlooks and complementary skills that help in identifying opportunities and not necessarily well-articulated demands for creative expertise in different environments and sectors. A specific challenge identified in stakeholder interviews and in previous literature concerns the lack of marketing and business skills among creative professionals. Bearing in mind the prevalence of self-employment, freelancers and micro-businesses in the creative sectors, there are concerns that initial education does not adequately prepare creative professionals for the realities of working life, in which – in addition to creative skills – a versatile set of generic skills from team working and networking to creating and managing a business are required (see Hennekam & Bennett, 2017).

Recommendation: Strengthen the provision of generic networking and business skills in the initial education of creative professionals.

There is some evidence that domestic education institutions have started to address this challenge. For instance, Aalto University provides 'Fashion management' as a minor subject for master's students. The primary target group consists of Aalto University's MA students of Fashion and Collection Design and MSc students of Marketing, but students from other Finnish universities are also eligible to apply.

In addition, there is a call for modes of education and training that are more flexible than degree-based programmes and make it possible to react swiftly to dynamic changes in the economy and working life. In general, working across multiple sectors exposes creative professionals (and others) to rapid changes in working life and business and, consequently, underlines the need for lifelong learning in retaining and upgrading the currency of skills and knowledge. This relates also to education authorities and institutions' capacity to assess and anticipate changes in skills requirements.

2) Tackling the lack of resources for development and innovation

A large proportion of self-employed freelancers and micro-firms is characteristic of the creative sectors. The small size of these enterprises and their lack of resources (time, money, expertise, etc.) make it challenging for them to engage in strategic development of their future offering. In principle, knowledge and competences could be found via company networks and education and research institutions. In practice, however, opportunities to use this potential are often restricted by limited resources.

Recommendation: Support creative actors in development by providing flexible access to expertise, facilities and equipment.

The Field Labs concept in use in the Netherlands provides an example of making available the spaces and resources residing within universities or knowledge institutes with special infrastructure. Besides physical space and equipment, the goal is to give access to comple-

mentary knowledge and competence supporting the development of new products and services. The Demola model developed in Tampere, Finland, is an arrangement that extends companies' resource pool to students and the expertise of their universities. This collaboration model has been further strengthened by the recent purchase by DIMECC of a minority share in Demola Global Ltd[30]. Together they have even more capacity to creatively disrupt and boost industrial renewal, with educational institutions and students potentially constituting an even more important element of creative firms' R&D capability. Public funding for R&D, innovation and business development presents another mechanism to support firms, including creative ones, in development of new products, services and solutions. Existing funding schemes, such as CreMA funding and innovation voucher (see section 2.4), support matchmaking and collaboration in development phase with other companies and actors with complementary skills and resources.

3) Boosting cross-sectoral ecosystem development

Involvement of different actors, i.e. diversity within an ecosystem, is one of the key factors for growth and renewal (Figure 23). During the different phases of development, from knowledge creation to commercialisation and business, the kinds of resources, competences and mechanisms (governance, funding etc.) needed to boost development are different.[31]

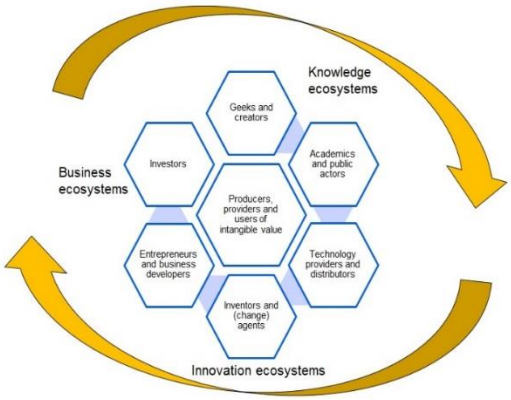


Figure 23. Different actors involved in collaboration in each ecosystem type.

Regarding *knowledge exploration and creation*, there is a need to jointly involve actors with different backgrounds and resources. At the *knowledge ecosystem phase*, creativity and openness are key capabilities for innovation even though not all involved actors represent the traditional creative sectors. Synergies can be found through knowledge exchange and sharing, whereas actors' absorptive capacity is a critical success factor. At the *idea creation phase,* creative individuals often benefit from support on commercialisation issues (e.g. marketing and selling competencies, business plans and market studies) if their own education has not included such aspects. At the *business ecosystem phase*, many creative professionals work on a self-employed basis and creative industry companies tend to be small with limited resources. At the *innovation phase*, the presence of investors and change

[30] https://www.sttinfo.fi/tiedote/europes-most-extensive-innovator-joins-europes-most-effective-innovator-demola-and-700-000-students-join-dimecc-to-boost-industrial-renewal?publisherId=57500502&releaseId=68170854

[31] Helsinki's recent ranking as 2nd in the TOP50 start-up cities is a good example of a development-boosting diverse ecosystem with talented entrepreneurs, investors, hubs, accelerators and key influencers in place. See https://valuer.ai/blog/top-50-best-startup-cities/

agents is needed in order to enhance commercialisation. The importance of the international networks that many investors can offer is seldom noted during the innovation ecosystem phase as the discussion is often focussed solely on regional hubs. In some creative industry sectors business operations are rather limited, with companies tending to be small lifestyle entrepreneurs rather than growth-targeting enterprises. This means that in several creative industry categories Finnish business ecosystems are not able to support internationalisation of the sector as whole as they have a limited number of globally operating core companies and, due to limited resources, are strongly focussed on only developing their own business.

In the interviews and the workshop areas such as wellbeing and health, tourism, transportation and circular economy were mentioned as possible growth areas involving cross-sectoral collaboration. More detailed analyses of the supply and demand of creative competencies is however needed, and it is important to involve all key players in collaboration from the outset.

Recommendation: Engage regional and national key players in joint problem-solving in a systematic way. For instance, Business Finland Growth Engines initiative (Kasvumoottorit) could offer a platform for joint effort at the national level.

From the viewpoint of business and future growth potential, it seems apparent that individual areas within the Finnish creative sectors have limited resources and capabilities to develop into proper ecosystems and grow independently. New growth potential can be found from the intersections between creative competencies and other sectors where there is strong know-how in Finland. To support such evolution, a new kind of openness and networking between actors is needed enabling joint formulation of feasible objectives/plan with concrete steps for the development and integration of the creative sectors' contribution with other sectors.

As seen in the cases of the UK and the Netherlands, the development of a shared objective has required intentional action; there have been instances and organisations in which the government, creative industries and other stakeholders have come together to define strategies regarding issues affecting the creative industries. It is important to emphasise that the actors should be visionary and open to addressing the issues at stake. The importance of openness was identified from the beginning of the process leading to the legitimisation of the creative industries sector in those countries, along with the foundation of organisations that aim to give a voice to the creative industries, such as the Creative Industries Council and Creative Industries Federation in the UK, and the Federation of Creative Industries and CLICKNL in the Netherlands. Most important, however, is for different government agencies to come together to engage in dialogue and find consensus on concrete ways to support the development within creative sectors and with other sectors

Recommendation: Form a comprehensive and inclusive policy for creative areas and engage key stakeholders and regional actors in joint development.

In the case of Finland, the key ministries and government agencies, namely the Ministry of Education and Culture, the Ministry of Economic Affairs and Employment and its innovation and trade support agency Business Finland, should champion the establishment of an inte-

grated initiative to support creative areas in Finland. To develop a comprehensive and inclusive policy for the creative areas, openness in collaboration within and beyond these areas is needed.

An example of good practice from the Netherlands is how main actors of the creative industry, such as the Dutch Creative Council, the Federation of Dutch Creative Industries and the Creative Industries Fund, collaborated in building on the strengths and reputation of the Dutch Creative Industry in branding the Dutch creative sector and in creating the necessary conditions for internationalisation.

4) Building on regional specialisation and networks

During the last two decades a lot of interest and actions at the regional level have been, and are, aimed at integrating and extending the use of skills and competencies residing in the creative sectors. This reflects growing awareness of the significance of culture, creative actors and skills for innovation and innovation environments has in regional context. Creativity attracts creativity and positively influences the local operating climate, creating a mind-set conducive to crossovers. Geographical vicinity, in turn facilitates flows of complementary knowledge and identification of opportunities for crossovers between creative and other sectors. For instance, in the Netherlands the development of regional creative knowledge centres was induced by a private sector actor (Philips, supporting the Design Academy in Eindhoven) when the need arose. This supported better coordination and organization of the sector due to less competition and strong regional actors.

While there is need for a clear policy at national level, local and regional institutional conditions and actors have a key role to play in promotion of cross-sectoral collaboration in practise. In the context of creative areas, public business services should be viewed as a holistic ensemble, where the role of local and regional development agencies and actors in interfacing with industry is recognised and strengthened as a key part of the chain of services offered.

Recommendation: Strengthen local and regional development actions to bring together creative and other area expertise.

To facilitate growth of innovation ecosystems, common spaces of cooperation are needed, either physical or virtual. Communities of different kinds of actors in the same space, such as start-up and scale-up accelerators and city platforms, have already been developed in Finland. For instance, the cities in the metropolitan area have been active in enabling and promoting this type of development.[32]

Cities are important actors as platforms and initiators for creative area service development and use. Best methods, models and solutions can be spread to other cities and municipalities and scaled to a regional and/or global level of operation. Objectives are usually twofold with a positive correlation: cities as testbeds for solutions to be scaled up and globalised,

[32]The ongoing development in Finland has been recognised also internationally. According to recent news the City of Espoo won the international Intelligent Community Awards 2018 https://www.espooinnovationgarden.fi/en/espoo-innovation-garden/media/news/espoo-innovation-garden-selected-as-the-most-intelligent-community-in-the-world/

and cities and city regions as hubs attracting global investment and talents. In light of the international benchmarking, the importance of connecting creative activity closely to regional development is especially in focus in the UK and South Korea. For example, the growth potential of the creative industries has become more pronounced in local and regional economies across the UK. In the UK, the private sector and universities come together in Local Enterprise Partnerships to consider what they can do to address the strengths and weaknesses within their particular area, such as over reliance on large firms or tightening the links between graduate talent pools and creative clusters. The case of South Korea, in turn, demonstrates how a cross-sectoral policy initiative implemented by regional hubs aims at facilitating growth.

The South Korean concept builds on each region's own strengths and thereby benefits from synergies based on this differentiation. Despite apparent differences in governance structures and decision-making models between the countries, the South Korean approach emphasising regional strengths and linkages between different sizes of companies includes elements that are worth considering also in the Finnish context.

Recommendation: Enhance target-oriented coordination between regional hubs in order to build prerequisites for scalable innovation ecosystems. For instance, organise a roadshow of Business Finland Growth Engine initiatives in collaboration with regional key players.

In order to strengthen the network between regional hubs, innovation policy actions should be built on regional strengths in collaboration with regional actors. Thus, the role of innovation policy actors would be to operate as a facilitator of target-oriented innovation ecosystems at the national level. This could be in practice activated through a regional roadshow of Business Finland Growth Engine initiatives.

The different development paths from city- to region-, country- and international level operations should be modelled and coordinated at a certain level. The role of cities and regions should be kept and developed as target-oriented growth platforms. The sectors supported should be chosen based on regional competencies that have the potential, within a certain time frame, to engage in international competition. It should be noted, that in many areas, markets are already global. In order to manage even the national market, the brand and offering should be globally attractive.

Regarding regional government reform, most regional development duties and tasks related to the promotion of business are planned to be handled in the future by regional governments as so-called growth services. Transition brings new opportunities, but also requirements. Each region has the best knowledge of the creative competencies residing within it, and therefore will have a central role in designing and implementing its own tools for cross-sectoral collaboration while keeping national priorities in mind. To succeed, the regional growth services should have a good insight and understanding of intangible value creation and creative competencies in cross-sectoral environment.

5) Scaling and growing creative area ecosystems outside national borders

In seeking international growth and scalability of creative area ecosystems, it is essential to acknowledge the two-way flow of internationalisation given that internationalisation is not only an outward activity of companies (e.g. exports) and talents but also an inward activity. Therefore, the essence of good ecosystem development and growth is having the right balance between inward (e.g. attracting international talent and companies in creative areas to Finland) and outward (e.g. companies' export volumes) internationalisation.

Recommendation: Design proactive national and regional internationalisation activities to enhance growth of creative area ecosystems.

A good practice example from the Netherlands is how the Dutch creative areas first proactively concentrated on creating a Dutch creative areas brand and then sought out certain sectors that could exploit and benefit from the creative competence they had to offer. In the Dutch case, a cross-sectoral link was created with the German car industry with the support of the foreign ministry and funding agencies. All activities were performed under the Creative Embassy concept, which facilitates more permanent relationship building in target areas, both creative areas and geographical locations.

In the Finnish context, a more proactive attitude with clearly focused objectives is needed to improve cross-sectoral links with industries outside national borders. Both industry and country priorities should be developed. Some creative areas are on this path already, for example Finnish design, game industry and music are recognised worldwide and set a good example. Nevertheless, the export of creative services (such as design, architecture) is typically embedded in the export of other sectors' products and services. This needs also to be recognised when evaluating the international competiveness and impacts of the creative sectors.

Branding the Finnish creative industries in line with the national brand is essential. Although the positioning of Finnish creative competencies and offering in the world has already been started long ago; cross-sector links in domestic and international industries need firmer attention in the future. Following the Dutch example, Finland should aim to develop creative areas as an export service, which requires national decision making that supports the balanced development of both inward and outward internationalisation.

The role of regions and cities in international scaling is, firstly, to ensure an attractive infrastructure for domestic and international talent in the creative areas and, secondly, that there is enough support available for local ecosystems to grow. In the latter case, for example the availability of long-term funding is essential. The continuation of public funding aids the adoption of long-term horizons in development, but equally important is that private funding opportunities are known and utilised. For example, regions can make EU-level funding opportunities more known among the regional creative industries and financial intermediaries. One recent such instrument that is not yet widely adopted in Finland is a loan guarantee offered under the Creative Europe programme (2014-2020), which aims at strengthening cultural and creative sector companies' financial capacity and competitiveness.

Recommendations relative to the four creative sector categories

When considering the strengths and weaknesses of the Finnish creative sectors, it should be noted that the recommendations presented above have different importance for each of the four creative sector categories applied in this study (see Section 2). Table 14 summarises the most relevant recommendations for these sectors. In the matrix, the horizontal axis represents the four creative sector categories, while the vertical axis represents the three ecosystem types applied in the study (see also Figure 4). Development of the Creative and cultural products and Creative services categories requires better cross-sectoral collaboration within Knowledge and Innovation ecosystems. In the Creative content and Creative environments and platforms categories, we observe more growth potential within own business ecosystems. This is especially true in the music, software and game industries, where actors are globally connected with their partners, customers and competitors through digital channels and markets are increasingly global.

Table 14. Matrix of recommendations per creative sector category and ecosystem type.

	Creative and cultural products	Creative content	Creative services	Creative environments and platforms
Knowledge ecosystems			Strengthening cross-disciplinary approach in education. Identification of cross-sectoral business cases through new ways of data analysis.	
Innovation ecosystems	Regional hubs supporting creative actors by providing flexible access to expertise, facilities and equipment.			
Business ecosystems		Boosting intermediators and development of distribution channels to advance concept development and bundling of offerings. Joint brand building and offering production environments & communities (cf. Composition camps in music sector).		Ensuring domestic funding for internationalisation and growth crucial for small start-ups, impacts needs to be assessed on sector level, diversity of actors is crucial for vitality of ecosystem (understanding of logic of entrepreneurial ecosystems required).

4.2. Recommendations for developing information collection on creative areas and activities

Regular monitoring and the collection of impact information through statistical data and qualitative evidence are means of increasing the visibility of creative economy development while also supporting the design and fine-tuning of effective policies.

Without the availability of trustworthy and comparable data, it is difficult to convincingly show the impact of the creative sectors on the economy and society at large. This challenge is further complicated by the fact that the existing statistics (e.g. standardised industrial and occupational classifications) do not take the diversity of the creative activities fully into account.

1) Comprehensive monitoring of creative activity in the economy

Economic statistics are central for monitoring, understanding and managing the economy, at both national and regional levels. Access to statistics that are accurate, reliable, relevant and timely is thus vital for policy makers. Such statistics are, however, equally important for effective decision making in the private sector (Bean, 2016).[33]

The current statistics show their age, being designed over fifty years ago when the economy was dominated by goods, not by services. The digital revolution and fast technological advancements of recent years have changed the way many businesses operate, giving rise to new ways of exchanging and providing services, and made it harder to accurately measure economic output. Many businesses also operate across national boundaries and depend on intangible assets, which adds to the complication of accurate measurement.

This changing structure of the economy means that the Standard Industrial Classification (SIC) and Standard Occupation Classification (SOC) will constantly lag reality, under-representing newer industries and over-representing industries that are declining in importance.

Recommendation: Investigate the use of textual data to gain insights on the creative activity of Finnish creative businesses.

The use of textual data can produce valuable insights about the economic activity of Finnish businesses and could be used in further research into business classifications using richer sources of data. For example, document vectorisation, dimensionality reduction, clustering and singular value decomposition can be used to gain insight from text documents. In general, these methods would be useful in any context when processing large amounts of documents and when looking to discover relationships and patterns in data. New insights into SIC 2008 and SOC 2010 classifications, for example, can be gained by discovering common patterns in the data. In the future, it will be possible to construct a machine learning algorithm that automatically classifies a creative business based on its description (Mandel & Scherer, 2015).[34]

A typical source of job descriptions is want advertisements. However, a number of studies have shown that there are multiple want ad aggregators that use different algorithms and arrive at different absolute counts for the number of want ads for a particular occupation and geography. Hence, government figures on jobs in creative occupations, when they are available, are generally the gold standard. Government statisticians are skilled at picking the appropriate sampling frame, avoiding or minimising sample bias, and not reporting results unless they are statistically valid. In the absence of government data, the next best option is a specially commissioned large-scale survey, which can be used to assess in detail questions of key interest.

There are many situations in which neither of the aforementioned options is useful. Occupational categories used in government surveys tend to be broad and lag significantly behind the changes in the labour market. On the other hand, large-scale surveys are expensive to administer and it is time-consuming to clean and analyse the data.

[33] Bean, C (2016). Independent Review of UK Economic Statistics

[34] Mandel, M and Scherer, J (2015). A low-cost and flexible approach for tracking jobs and economic activity related to innovative technologies. Nesta Working Paper No. 15/11

In textual analysis of want ads, each data draw can give a count of creative occupation ads by geographic area, as well as a count for Finland as a whole. It is important to note, however, that the sample is easily biased. For example, for white-collar skilled occupations, want ads for an occupation in a given area may contain a considerable amount of information on employment levels for that occupation. However, for lower-level employees, want ads often contain little information about employment. Furthermore, not all jobs are advertised online, want ads are not exhaustive, and collecting and processing adverts involves a margin of error.[35]

The next step is to translate want ad counts into employment estimates. This requires two steps. First, we need to compare the total number of creative occupation want ads with the total creative occupational employment for the country. Then we divide the national employment level for creativity-related occupations by the number of want ads. This gives us a job/want ad multiplier. In other words, each creative occupation want ad translates into X people in creative occupations. We can then apply the job/want ad multiplier directly to the ad counts (Mandel & Scherer, 2015). The results would provide a mapping of the location of creativity-related jobs and creativity-related economic activity in Finland.

The range of estimates that this produces reveals several important points. When doing an analysis of creative jobs, it is necessary to pick out a set of keywords that best fits the goal of the analysis. There is never going to be a bright line distinguishing 'creative' jobs from other types of jobs. A smaller set of keywords will generate lower estimates. By using an appropriate keyword list, want ad analysis can be applied to new occupations. However, to be useful, the want ad approach needs to be benchmarked against a more authoritative source of data. For example, the annual government labour survey can be used as the authoritative source. After benchmarking, the want ad data can be used to make cross-sectional geographic comparisons of employment in creative occupations.

Recommendation: Investigate regional creative activities using a real-time creative activity dashboard.

Policy makers in a particular region often want to know whether creative employment or creative activity is growing or shrinking in their region. Government surveys tend to be years behind the cutting-edge of knowledge regarding industrial and occupational categories. In addition, for cost reasons and the difficulties of doing large surveys, they usually cannot supply accurate and detailed results for small geographic areas. An obvious alternative is to set up a real-time dashboard using want ads targeted at a particular creative activity. This can be done for geographic areas of any size and for any creative activity.

For example, suppose that we wanted to monitor gaming development jobs and gaming economic activity in the city of Tampere. A monthly count of gaming want ads in the vicinity of Tampere could be set up using a gaming-specific keyword list. If this process is repeated for several different technologies, one has the beginnings of a creative activity dashboard that can be customised to any locality.

[35] Statistics Finland has extensively tested commercial textual analysis services in different business units. It was concluded that these services may provide information that supports statistical production but cannot directly replace existing company or administrative data collections. The basic weakness of these services is that they are based on information that is available on the Internet free of charge. This information can be heavily biased towards ICT-related activities. Additionally, much of the information must be reprocessed and repaired. A new way of estimating job vacancies will be piloted in 2019.

However, this simple version of a dashboard is not enough. Want ad counts are driven by employer and aggregator needs, rather than a consistent data collection process. As a result, the want ad process is susceptible to shocks over time that are not directly related to changes in employment. To increase the accuracy of a dashboard, therefore, it is essential to do comparisons with other similar regions, as well as the national average. A gaming dashboard for Oulu, for example, would also have to track gaming-related jobs in Helsinki, Tampere and Finland as a whole. The dashboard would then be set to register relative as well as absolute changes (Mandel & Scherer, 2015).

Recommendation: Investigate methods to map out how creative employment is likely to change, and the implications for skills.

To better support the creative industries, we need to ensure that our creative talents have the right skill sets. Bakhshi et al. (2017) use a novel and comprehensive mixed method approach to map out how employment is likely to change and the implications for skills. The study challenges the false alarmism that contributes to a culture of risk aversion and holds back technology adoption, innovation, and growth; this matters particularly to countries that already face structural productivity problems. By identifying the bundles of skills, abilities, and knowledge that are most likely to be important in the future, as well as the skills investments that will have the greatest impact on occupational demand, they provide information that educators, businesses, and governments can use for strategic and policy making purposes to better prepare us for the future.

Similarly, the creative industries face an information gap in skills. The Finnish creative industries need to be able to show how the sector will 'boost skills' and create high value, high productivity jobs. In this planning, however, the sector faces a challenge: there is little granular evidence on the skills required for creative talent. Moreover, the creative industries employ individuals in an enormous range of creative occupations, from software developers to museum curators. The proposed exercise would aim at showing how different creative groups rely on various skill clusters, as well as providing information on employment, growth and salaries. As we have shown in this report, creative groups vary enormously in size and growth. In addition, there are large salary gaps between creative groups, there is no 'one creative type', and there is evidence of skill mixing. Creative jobs require both creative and complementary skills. It is particularly striking how often digital tech skills are demanded in occupations that are creative. This suggests that learners should have access to a broad range of subjects and technologies in order to expose them to the range of skills and knowledge that employers need.

2) Systematisation of data produced by publicly funded projects

As previously mentioned, to encourage creative areas to improve cross-sectoral collaboration and internationalisation, the value of these areas should be made explicit and known. Impact assessment provides tools to make the value explicit[36], but needs systematically collected and reported information to succeed. As discussed, national statistics are an im-

[36] An example of showing the value of creative areas in Finland, see a study "luova loikka Viisi teesiä Suomen talouden luovalle nousulle", Wevolve & Finpro 25.02.2016

portant source of evidence, but the official statistics have shortcoming regarding identification of all aspects of creative activities. Policy instruments targeting actors in creative industries are another potential data source - provided that information is collected systematically and classifications used enable identification of actors at sufficient level. Therefore, in the context of this project and as described in Section 2.4, few of the central funding instruments were evaluated; CreMa offered by the Ministry of Education and Culture, ESR (European Social Fund) 'Creative Expertise' project funding, and the Innovation Voucher provided by Business Finland.

In light of the evaluated CreMa and ESR 'Creative Expertise' project data, information about the collaboration partners was incomplete in both cases.[37] For monitoring and assessment purposes, this information should be more systematically collected and described. In case of Innovation Voucher, data on funded projects is available but the industry classification used in the project database restricts usability of quantitative information for more precise analysis of cross-sectoral collaboration by and with creative sector companies. It is important that project-level data on collaboration and other applicable dimensions of creative areas are easily available and regularly updated to serve policy making.

Regarding cross-sectoral collaboration, information on collaboration partners should be requested not only in the application phase but also in the reporting phase. Valuable information from the latter phase might include, for example, information on how successful the collaboration has been, what was achieved, and whether the collaboration has resulted in continuation projects or joint business. Most important of all, however, is that the information is collected consistently throughout the period of implementation.

Recommendation: Systematically produce information and report the value of creative areas in Finland.

In order to evaluate the integration of creative industries and traditional core areas of creative activity in the economy, it is recommended that information on collaboration, at minimum the names and sectors of collaboration partners, should be systematically described in funding decisions and descriptions. Furthermore, the publishing of annual reviews of collaboration would help to communicate the value and role of creative areas in the economy.

The Innovation Voucher offered by Business Finland is a new instrument (established in 2016) and has been well received by creative area actors. Due to its newness, the voucher data is fairly fresh and evaluation of its use in creative areas has not been previously done. This largely qualitative data was retrieved with the help of Business Finland expert and it offered reasonable information for the assessment at this stage. As more annual data becomes available, it would be interesting to assess the impact of different instruments on creative areas vis-à-vis each other. Recently, demand for the Ministry of Education and Culture's funding instruments (Digi, CreaDemo and CreMA funding) has slightly stagnated, possibly due to the transfer of applicants to the Innovation Voucher. With the currently available data this cannot be verified, but it is an interesting area for future study.

Data on ESF-funded projects, in turn, indicates that although collaboration has been strong, there has been either a lack of industry partners or information on industry partners is miss-

[37] Regarding the CreMA funding, the information about collaboration and sector of collaborating actors is requested for all project proposals in application phase, but it was only partially covered in the material used in the assessment.

ing. The likely reason for this is that the focus of ESF funding is on competence development not company collaboration. This example shows that for monitoring and assessment purposes the description of collaboration should be broadened to include, for example, what is aimed for and achieved by collaboration. The fact that current descriptions contain little information on collaboration could be due to changes in the reporting system, which has led to a lack of available statistics on the participating companies.

Furthermore, data should not only be systematically collected but should also be easy to store and access. This requires application and project registers to be user-friendly. System use and access to data must not be difficult for the user. We therefore recommend that the usability of application and project registers, such as Business Finland and AVEK, should be fine-tuned in all instances to ensure user-friendly collection and storage of creative industry information.

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APPENDIX 1. STATISTICAL ANALYSIS OF FINNISH CREATIVE INDUSTRIES

Introduction

Methodological introduction

A dynamic sector such as the creative industries is difficult to measure. The Standard Industrial Classification (SIC) codes underpinning the official economic statistics – used to derive employment, productivity and value added estimates in economic analyses – make it possible to track the growth of industries on a consistent basis. However, as they are very infrequently updated, they have obvious limitations in capturing the evolution of fast-changing industries.

The economic reality has evolved and definitions have not been updated in pace with the change – most notably digitization and the fact that increasing numbers of industries are embracing creativity as a way of gaining competitive advantage.

This reflects a broader problem: creativity is a poorly defined concept, and there is no agreed objective basis on which to judge what is, or is not, creative. Different writers and commentators come up with their own definitions. Three defining works in the field – Florida (2002), Caves (2002) and Cox (2005) – offer definitions that overlap and, to a degree, mutually re-enforce each other, but certainly do not coincide. This is not surprising, as each writer has their own particular focus – for example, Florida on the workforce and its relation to urban space, Caves on the contractual structure of creative business, and Cox on the relation of design to business innovation. However, though each is interesting and valid in its own sphere, none addresses the wider question of what do we mean by the word 'creativity', nor provides a definition of the creative industries that is rooted in a systematic answer to that question.

Origin of the Creative Intensity method

The method we use in this paper focuses on a measure which Freeman (2004, 7) termed creative intensity, defined as the proportion of workers in any given creative industry that are engaged in a creative occupation. This approach draws on a key feature of the UK Department for Culture, Media and Sport (DCMS) classification: it includes a definition of both industries and occupations. This distinguishes it from most other industrial classifications, including the SIC system itself, which define only industries.[38]

The approach itself is rooted in the early work of the European Leadership Group on Culture, known as LEG. The development of European Working Groups on cultural statistics began in November 1995, when the European Council of Culture Ministers adopted the first resolution on the promotion of statistics concerning culture and economic growth. This resolution invited the European Commission to ensure that better use is made of existing statistical resources and that work on compiling comparable cultural statistics within the European Union proceeds smoothly. From

[38] Appendices provide a full list of occupations and industries defined as creative in 2011 (DCMS 2011).

1997 to 2004, the LEG and its following operational European working groups drew up the first European framework for cultural statistics and developed specific methodologies, such as the method for estimation of cultural employment (Deroin, 2011).[39]

This led in 2001 to a tool, developed by the European Task Force on cultural employment, to produce a 'culture matrix' which brings together cultural professions and cultural activities. The method consists in estimating all cultural employment in the economy, that is, employment in all cultural activities along with cultural jobs in non-cultural activities. The estimate can be performed by using two classifications (NACE and ISCO) used in the European Labour Force Survey. Once the aforementioned classifications are filled in, it is simple to make an estimate of cultural jobs:

Cultural employment = cultural occupations (A)

+ non-cultural occupations in cultural activities (C)

+ cultural occupations in non-cultural activities (B)

In a recent study for the German Federal Ministry for Economic Affairs and Energy[40], Fraunhofer ISI and ZEW defined 12 subsectors in the creative and cultural sector at the NACE 4-digit and 5-digit level (music, literature, art, film, radio and TV, design, architecture, press, marketing, software and game industry, and others)[41].

On the other hand, the UK Department for Culture, Media and Sport (DCMS) define Creative Industries as including: Advertising and marketing, Architectural activities, Crafts, Design: product, graphic and fashion design, Film, TV, video, radio and photography, IT, software and computer services, Publishing, Museums, galleries and libraries, and Music, performing and visual arts.[42] The DCMS includes 'industries which have their origin in individual creativity, skill and talent and have a potential for wealth and job creation though the generation and exploitation of intellectual property.'[43]

Creative workforce

Three groups of researchers have drawn attention to the distinctive role of the creative workforce inside the creative industries themselves. Peter Higgs and Stuart Cunningham, working at the Centre of Excellence for Creative Industries (CCI) at Queensland University of Technology, devised an approach they termed the 'Trident' method (Higgs et al., 2005). The set of occupations and industries generated by this analysis defines the employment in the 'economy' of interest. In the case of the creative economy, this consists of a combination of three types of employment:

- Creative Specialists: those working in creative occupations in creative industries

[39] Deroin, V. (2011) European Statistical Works on Culture: ESSnet-Culture Final report, 2009-2011.

[40] ZEW and Fraunhofer ISI. (2016) Monitoring zu ausgewählten wirtschaftlichen Eckdaten der Kultur- und Kreativwirtschaft 2014, Bericht im Rahmen des Projekts Stand und Perspektiven der deutschen Kultur- und Kreativwirtschaft 2013-2015, im Auftrag des Bundesministeriums für Wirtschaft und Energie (BMWi).

[41] Originally Musikwirtschaft, Buchmarkt, Kunstmarkt, Filmwirtschaft, Rundfunkwirtschaft, Markt für darstellende Künste, Designwirtschaft, Architekturmarkt, Pressemarkt, Werbemarkt, Software- und Games-Industrie, and Sonstige

[42] Creative Industries Economic Estimates. (2016) Department for Culture, Media and Sport.

[43] Creative Industries Economic Estimates: Full Statistical Release. (2011) Department for Culture, Media and Sport, p. 6.

- Support Creatives: those working in a creative industry, but who are not themselves employed in a creative occupation
- Embedded Creatives: those working in creative occupations outside creative industries

This approach results in a 'trident' of creative employment, shown below in the shaded boxes, formerly described as the 'Creative Trident'.[44] In the UK, the Creative Industries Trident shows that around one-half of creative jobs were outside the creative industries in the wider creative economy.

Table 1. The Creative Industries Trident.

		Creative Industry	
		Yes	No
Creative Occupation	Yes	**Creative Specialist** Creative occupation in creative industry	**Support Creatives** Creative occupation in non-creative industry
	No	**Embedded Creatives** Non-creative occupation in creative industry	Non-creative occupation in non-creative industry

Establishing a common terminology, e.g. as presented below, would enable the Creative Economy to be discussed in a coherent manner:

- Creative Economy: Those employed in creative industries (either in creative occupations or other roles) and those employed in creative occupations outside the creative industries
- Creative Industry: Industry defined as creative
- Creative Occupation: Occupation defined as being creative under the set of SOC codes
- Creative Specialist: Someone employed in a creative industry in a creative occupation
- Support Creative: Someone employed in the creative industries in an occupation that is not creative based on the above definition
- Embedded Creative: Someone employed in a creative occupation outside of the creative industries.

Table 2 summarises the conceptual segmentation of the Creative Economy for Finland.

Table 2. Conceptual segmentation of the Finnish Creative Economy.

Specialist	**Non-specialist**	**Embedded**	**Industry Total (Specialist + Non-specialist)**	**Occupation Total (Specialist + Embedded)**	**Economy (Industry + Embedded) OR Occupation + Non-specialist**
Creative Specialist	Support Creatives	Embedded Creatives	Creative Industries	Creative Occupations	Creative Economy
54,200	36,800	67,800	91,000	122,000	156,800

Working independently, Freeman (2004, 7) began producing measures of 'creative intensity' and showed that this was systematically higher in the creative industries than elsewhere, was increasing over time, and was particularly high in London and the South-East of England. Other studies

[44] Higgs, P., Cunningham, S. & Bakhshi, H. (2008) Beyond the Creative Industries: Mapping the Creative Economy in the United Kingdom. Nesta.

that emphasised the role of the embedded workforce include Falk et al. (2011) for the EU countries[45] and Santos Cruz and Teixeira (2012) for Portugal.[46]

Freeman (2008) concluded that if we think of this labour as a resource, and the sector's outputs as a product, then it begins to make sense to conceive of the industry as a specialised branch of the division of labour that uses this resource to produce specialist products. We can illustrate this by asking the simple question of where creatively occupied workers are actually employed.[47]

Dynamic Mapping methodology

The starting point for the analysis in this report is the Dynamic Mapping methodology for classifying and measuring the creative economy developed by Bakhshi, Freeman and Higgs (2013) (henceforth BFH), and which has been adopted by the UK government to generate the official creative economy estimates (Department for Culture Media and Sport, 2014). This methodology is based on the principle that the creative industries are 'those industries that specialise in the employment of creative talent for commercial purposes' (Bakhshi, Hargreaves and Mateos–Garcia, 2013) – that is, have unusually high proportions of their workforce employed in creative occupations (creative intensity). The BFH analysis has five stages:

1. Determine the set of 'creative occupations', defined using 4–digit Standard Occupational Classification (SOC) codes. To do this, BFH subjectively score 4–digit SOC codes in a 'Creative Grid', whose criteria are drawn from a review of the creative work literature and identify five task–level features of creative work. BFH then score a longlist of occupations, keeping those 4–digit SOCs that score four or more out of five in terms of task content.
2. Calculate total employment in each 4–digit Standard Industrial Classification (SIC) code industry cell across the set of all 4–digit industries. Work out the 'creative intensity' of each industry. This is specified as the share of creative occupations' employment in each industry.
3. Set a creative intensity 'threshold' where industries with creative intensities above this threshold are denoted 'creative' industries and the rest are denoted 'non–creative'. BFH use a probabilistic procedure to identify this threshold as 30 per cent for the UK over the period studied. They also exclude some 'volatile' industries where creative intensity is not consistently above the threshold, or where codes are based on particularly small samples following official guidance.
4. Calculate creative industries and creative economy employment following Higgs et al.'s (2008) Creative Trident approach. Specifically, creative economy employment is given by the sum of creative industries employment, and all creative jobs in other industries ('embedded' jobs).
5. BFH also employ an extensive series of sensitivity checks, which include varying the set of 'seed' occupations (e.g. classifying occupations as creative if they meet a fewer number of the criteria specified in the Creative Grid), varying the set of industries deemed 'creative', varying the creative intensity threshold, and replicating the results using the Annual Survey of Hours and Earnings (ASHE) business survey, instead of labour force survey data.

[45] Falk, R., Bakhshi, H., Falk, M., Geiger, W., Karr, S., Keppel, C., Leo, H. & Spitzlinger, R. (2011) Innovation and Competitiveness of the Creative Industries. Vienna: Austrian Institute of Economic Research.

[46] Santos Cruz, S. & Teixeira, A. (2012) Methodological approaches for measuring the creative employment: a critical appraisal with an application to Portugal. FEP Working Papers No. 455.

[47] Freeman, A. (2008) Benchmarking and Understanding London's Cultural and Creative Industries'.

Our approach is as follows. We cross-walk Finnish creative occupation codes identified by the DCMS with their International Standard Classification of Occupations (ISCO) equivalents. We then assemble estimates of national employment in the creative economy and creative industries, separating out creative jobs and non-creative jobs. We use employment microdata from workforce surveys to produce our estimates. We then analyse the creative intensities of different industries. We access data on key measures of economic performance, such as employment, salaries, turnover and exports, from official Statistics Finland datasets:

- The Finnish Longitudinal Employer–Employee Data (FLEED) publicly available for research purposes (subject to terms and conditions of confidentiality) at Statistics Finland's research laboratory. FLEED merges comprehensive taxation and other administrative records of all labour force members as well as all employers/enterprises subject to value added tax (VAT); it can be complemented by a range of additional information from both private and public sources. FLEED has data on both firms and establishments. We use the establishment level in order to study the geographical division of creative and supportive employees within a firm and their respective wage levels.
- The Business Register database on the enterprise level covers the annual enterprise-level statistics of enterprises and private non-profit organisations. The data includes basic information about enterprises' industry, location, ownership, turnover, number of employees, and wages and salaries.
- The International Trade Statistics describes the commodity trade between Finland and other Member States of the European Union (EU) and between Finland and Third Countries, i.e. internal and external trade. International Trade Statistics is the official information source on the importation, exportation and balance of trade of Finland.

Where possible, we use these datasets to produce estimates of employment, salaries and creative intensity at the national and local levels.

In this report, to be consistent with the Dynamic Mapping approach, we use the DCMS classifications of creative occupations and industries published in the January 2014 statistical release, even though there are some small differences with those in the Dynamic Mapping. The corresponding 48 occupations and 34 industries are set out respectively in Table 3 and Table 5 below.

Table 3. Creative occupations (SOC 2010 codes).

Advertising and marketing	
1221	Sales and marketing managers
1222*	Advertising and public relations managers
2431	Advertising and marketing professionals
2432	Public relations professionals
Architecture	
2161	Building architects
2162	Landscape architects
2164	Town and traffic planners
3432	Interior designers and decorators
Crafts	
7311	Precision-instrument makers and repairers
7312	Musical instrument makers and tuners
7313	Jewellery and precious-metal workers

7314	Potters and related workers
7315	Glass makers, cutters, grinders and finishers
7316	Sign writers, decorative painters, engravers and etchers
7317	Handicraft workers in wood, basketry and related materials
7318	Handicraft workers in textile, leather and related materials
7319	Handicraft workers not elsewhere classified
7531*	Tailors, dressmakers, furriers and hatters
7532*	Garment and related pattern-makers and cutters
7533*	Sewing, embroidery and related workers
Design: product, graphic and fashion design	
2163	Product and garment designers
2166	Graphic and multimedia designers
Film, TV, video, radio and photography	
2654	Film, stage and related directors and producers
3431	Photographers
3521*	Broadcasting and audio-visual technicians
IT, software and computer services	
1330	Information and communications technology service managers
2511	Systems analysts
2512	Software developers
2513	Web and multimedia developers
2514	Applications programmers
2519	Software and applications developers and analysts not elsewhere classified
2521*	Database designers and administrators
2522*	Systems administrators
2523*	Computer network professionals
2529*	Database and network professionals not elsewhere classified
Publishing	
2641	Authors and related writers
2642	Journalists
2643	Translators, interpreters and other linguists
Museums, galleries and libraries	
2621	Archivists and curators
2622	Librarians and related information professionals
3433	Gallery, museum and library technicians
3435	Other artistic and cultural associate professionals
Music, performing and visual arts	
2651	Visual artists
2652	Musicians, singers and composers
2653	Dancers and choreographers
2655	Actors
2656	Announcers on radio, television and other media
2659	Creative and performing artists not elsewhere classified

* = not in Finland's official Cultural Statistics[48]

This listing of creative occupations deviates somewhat from the occupations included in the Finland's official Cultural Statistics. Table 4 shows the occupations that are included in Finland's official Cultural Statistics but not in our listing.

Table 4. Cultural occupations included in Finland's official Cultural Statistics but not in Nesta's listing.

Code	Description
2354	Other music teachers
2355	Other arts teachers
3339	Business services agents not elsewhere classified
4221	Travel consultants and clerks
4411	Library clerks
4415	Filing and copying clerks
5113	Travel guides

The corresponding 34 industries are set out respectively in Table 5 below, along with the creative intensities.

Table 5. Creative industries groups, 2015 values.

		Private and Public Companies			**Public Institutions**			**Total**		
		Creative Specialist	Support Creatives	Intensity	Creative Specialist	Support Creatives	Intensity	Creative Specialist	Support Creatives	Intensity
Advertising and marketing										
7021*†	Public relations and communication activities	308	790	28%	0	0	NA	308	790	28%
7311	Advertising agencies	4 866	3 939	55%	0	0	NA	4 866	3 939	55%
7312†	Media representation	96	288	25%	0	0	NA	96	288	25%
Architecture										
7111	Architectural activities	2 613	990	73%	50	0	100%	2 663	990	73%
Crafts										
3211*†	Striking of coins	9	62	13%	0	0	NA	9	62	13%
3212*†	Manufacture of jewellery and related articles	275	164	63%	0	0	NA	275	164	63%

[48] Statistics Finland. (2016) Kulttuurityövoima Suomessa 2015, Liitetaulukko 2. Kulttuuriammatit vuoden 2010 ammattiluokituksen mukaan. Helsinki: http://www.stat.fi/til/klt/2015/01/klt_2015_01_2016-08-31_tau_002_fi.html

3213*†	Manufacture of imitation jewellery and related articles	39	6	87%	0	0	NA	39	6	87%
Design: product, graphic and fashion design										
7410	Specialised design activities	1 619	561	74%	0	0	NA	1 619	561	74%
Film, TV, video, radio and photography										
5911	Motion picture, video and television programme production activities	1 654	734	69%	56	41	58%	1 710	775	69%
5912	Motion picture, video and television programme post-production	133	67	67%	0	0	NA	133	67	67%
5913	Motion picture, video and television programme distribution	31	56	36%	0	0	NA	31	56	36%
5914	Motion picture projection activities	161	492	25%	0	7	0%	161	499	24%
6010†	Radio broadcasting	211	139	60%	0	0	NA	211	139	60%
6020	Television programming and broadcasting activities	224	249	47%	2 759	592	82%	2 983	841	78%
7420†	Photographic activities	1 032	239	81%	2	1	67%	1 034	240	81%
IT, software and computer services										
5821	Publishing of computer games	142	60	70%	0	0	NA	142	60	70%
5829*†	Other software publishing	713	791	47%	0	0	NA	713	791	47%
6201	Computer programming activities	19 654	10 085	66%	0	36	0%	19 654	10 121	66%
6202†	Computer consultancy activities	4 465	3 158	59%	148	279	35%	4 613	3 437	57%
6312*†	Web portals	240	275	47%	0	5	0%	240	280	46%
Publishing										

5811	Book publishing	831	620	57%	6	10	38%	837	630	57%
5812*†	Publishing of directories and mailing lists	138	759	15%	0	0	NA	138	759	15%
5813†	Publishing of newspapers	2 913	4 582	39%	7	6	54%	2 920	4 588	39%
5814†	Publishing of journals and periodicals	1 291	1 416	48%	9	8	53%	1 300	1 424	48%
5819*†	Other publishing activities	132	463	22%	0	0	NA	132	463	22%
7430†	Translation and interpretation activities	2 080	343	86%	0	0	NA	2 080	343	86%
Museums, galleries and libraries										
9101†	Library and archive activities	12	23	34%	131	203	39%	143	226	39%
9102*	Museum activities	17	50	25%	497	155	76%	514	205	71%
9103*†	Operation of historical sites and buildings and similar visitor attractions	1	4	20%	20	0	100%	21	4	84%
Music, performing and visual arts										
5920	Sound recording and music publishing activities	531	222	71%	0	0	NA	531	222	71%
8552*†	Cultural education	493	561	47%	186	939	17%	679	1 500	31%
9001	Performing arts	904	603	60%	1 280	419	75%	2 184	1 022	68%
9002	Support activities to performing arts	483	730	40%	5	10	33%	488	740	40%
9003	Artistic creation	631	404	61%	0	0	NA	631	404	61%
9004	Operation of arts facilities	55	172	24%	3	6	33%	58	178	25%

* = not in Finland's official Cultural Statistics[49]

† = not in the Ministry of Economic Affairs and Employment report on creative industry firms[50]

[49] Statistics Finland. (2016) Kulttuurityövoima Suomessa 2015, Liitetaulukko 1. Kulttuuritoimialat vuoden 2008 toimialaluokituksen mukaan. Helsinki. http://www.stat.fi/til/klt/2015/01/klt_2015_01_2016-08-31_tau_001_fi.html

[50] Ministry of Economic Affairs and Employment. (2013) Julkinen rahoitus luovien alojen yrityksissä, Työ- ja elinkeinoministeriön julkaisuja 26/2013

A total of 16 industries are included in the Finland's official Cultural Statistics, 10 that are included in both the Finland's official Cultural Statistics and in the Ministry of Economic Affairs and Employment report about creative industry firms, and 8 that are included only in the Ministry of Economic Affairs and Employment report but not in our classification. However, with the exception of 'Show production and management activities' (NACE code 74901), those industries employ very few people or have very low creative intensity.

Figure 1 summarises how this guides our approach, presenting creatively–occupied jobs as a frequency distribution. The vertical axis shows the number of creatively-occupied jobs per industry, the horizontal axis shows the corresponding creative intensity.

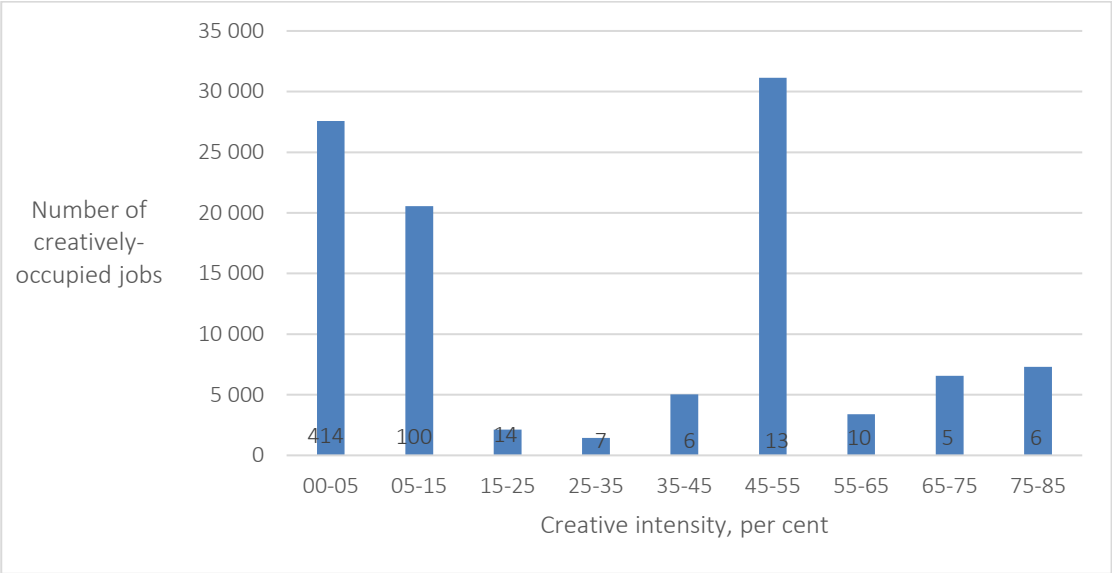

Figure 1. Distribution of creatively-occupied jobs by creative intensity.

The chart shows how creatively-occupied jobs are distributed between industries. The horizontal axis shows nine bands of increasing creative intensity, the smallest covering zero to 5 per cent and the largest covering 75 to 85 per cent. Each column shows the creative employment accounted for by the industries whose intensity falls within that band: thus the 22,800 creatively-occupied jobs within code 6201 (Computer Consultancy) with an intensity of 11 per cent are included in the bar above the '05-15 per cent' band. The numbers inside the bars show the number of industries that fall within this frequency range at NACE 4-code level.

This is a bimodal distribution with two peaks of clustered intensity – one between 0 and 15 per cent, and the other between 45 and 55 per cent. We can study this in more detail by asking how much employment in each frequency band is accounted for by SIC codes that are included, at least in part, in the DCMS classification, and SIC codes that are not. This is shown in Figure 2.

This clearly confirms that a group of creative industries are distinguished by a markedly higher tendency to employ creative workers. However, it also points to misallocations in the DCMS statistics: a definite group of industries that the DCMS does not treat as creative exhibit high intensities, showing as a 'blip' in the distribution of non-creative industries, peaking at 55-65 per cent. We believe that in many cases it is the software occupations that explain this phenomenon. In other words, ICT creative occupations work with non-creative occupations within non-creative industries.

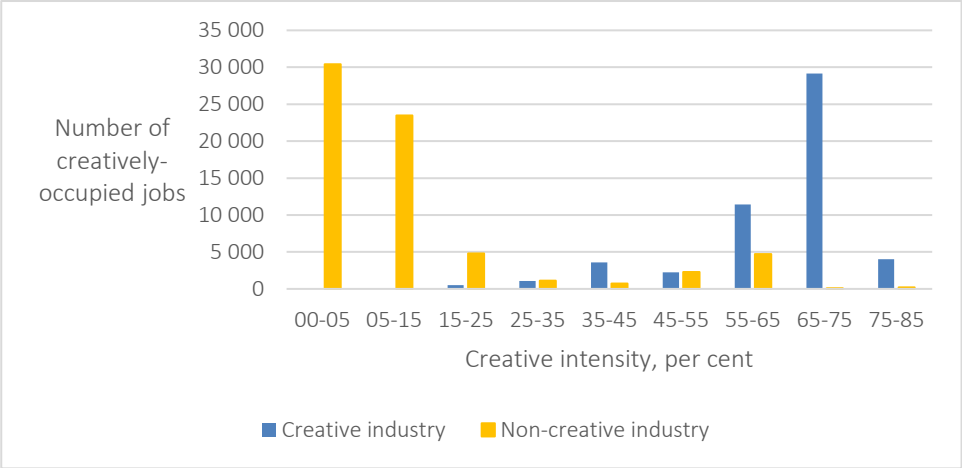

Figure 2. Distribution of creatively-occupied jobs by creative intensity, partitioned into creative and non-creative industries.

A comprehensive study of the role played by ICT, and software in particular, in the transformation of the creative industries deserves further research. This role is complicated by the fact that the ICT-based industries are highly developed in other fields too – for example, in commerce and financial service industries, in the automation of manufacture, in science-based industries, engineering and so on. Thus, the mere employment of ICT talent is not always in itself an indicator of creativity. However, ICT labour appears to play a special role within the creative industries when it is deployed in combination with other types of creative labour.

This analysis thus confirms empirically that the creative industries are economically distinct, and are distinguished by a markedly higher tendency to employ creative workers. Also, there is a strong tendency to employ workers in ICT occupations in tandem with other creative occupations. This leads us to conclude that intensity, including the intensity of use of at least some ICT occupations, is a significant discriminator of industry creativity.

The size of the Finnish Creative Economy

Based on these classifications, we estimate the overall size of the Finland's creative economy and its three main components: specialist, non-specialist, and embedded employment. Table 6 shows the figures for employment in Finland within these components for 2011 to 2015. Here, we have followed the five stages approach of Bakhshi, Freeman and Higgs (2013).[51]

[51] Bakhshi, H., Freeman, A., and Higgs, P. (2013) A Dynamic Mapping of the UK's Creative Industries. London: Nesta

Table 6. Creative Economy in Finland, 2011-2015.

Year	Specialist	Support	Creative Industries	Embedded	Creative Occupations	Creative Economy
2011	55 200	42 500	97 800	65 200	120 400	162 900
2012	50 700	44 400	95 200	68 000	118 700	163 100
2013	49 200	40 600	89 900	65 300	114 500	155 100
2014	51 300	39 400	90 800	66 000	117 300	156 700
2015	54 100	36 800	90 900	67 800	121 900	158 700
Average	52 100	40 700	92 900	66 400	118 500	159 300
Share of workforce	2.5%	1.9%	4.4%	3.2%	5.6%	7.6%
Share of creative economy	32.7%	25.5%	58.3%	41.7%	74.4%	100.0%

We can compare the aforementioned figures with the total employment in Finland in creative and non-creative industries, see Table 7 below.

Table 7. Creative and non-creative industries' employment in Finland, 2011-2015.

	Creative Industries			**Non-Creative Industries**			**Total**		
	Creative Specialists	Support Creatives	Together	Embedded Creatives	Other	Together	Creative Occ.	Non-Creative Occ.	Together
2011	55 250	42 566	97 816	65 219	2 045 726	2 110 945	120 469	2 088 292	2 208 761
2012	50 730	44 490	95 220	68 017	2 061 312	2 129 329	118 747	2 105 802	2 224 549
2013	49 265	40 685	89 950	65 380	1 988 550	2 053 930	114 645	2 029 235	2 143 880
2014	51 343	39 484	90 827	66 076	1 960 429	2 026 505	117 419	1 999 913	2 117 332
2015	54 156	36 814	90 970	67 844	1 939 733	2 007 577	122 000	1 976 547	2 098 547

In a continuation report, Nathan, Pratt and Rincon–Aznar (2015) look at the creative industries of the EU, UK and other member states between 2011 and 2013. Where possible, it also provides estimates of creative economy employment, that is, the number of workers employed in the creative industries plus those employed in creative occupations outside of the creative industries. It does this using the EU Labour Force Survey (EU LFS). Unfortunately, the pan-EU data supplied by Eurostat is not available at the original level of resolution. Nathan, Pratt and Rincon–Aznar (2015) therefore 'translate' from the 4-digit UK codes, using parsing rules to generate 3-digit best-fit equivalents.

Table 8. Creative Economy in European comparator countries, 2011-2013[52].

Country	Specialist	Support	Creative Industries	Embedded	Creative Occupations	Creative Economy
Germany	2,1%	3,7%	5,7%	2,2%	4,2%	7,9%
France	1,0%	4,6%	5,6%	1,8%	2,8%	7,4%
Nether-lands	2,5%	5,0%	7,5%	2,5%	5,0%	10,0%
Poland	1,2%	2,5%	3,6%	1,8%	3,0%	5,4%
Sweden	3,5%	5,4%	8,9%	3,1%	6,6%	12,0%
UK	2,8%	4,8%	7,6%	1,9%	4,7%	9,5%
UK (2013)	2,9%	2,6%	5,4%	2,9%	5,8%	8,3%

Table 8 presents the headline results for the EU and UK creative industries for the period 2011–2013. Sweden has proportionately the largest creative economy workforce (12 per cent in 2013), followed by the Netherlands (10 per cent) and the UK (9.5 per cent). We can see that the creative share of the Finnish workforce is at a good European level. In Table 8 the UK (2013) refers to the estimation Bakhshi, Freeman and Higgs (2013) made with 4-digit UK data, which is comparable to the methodology we are following.

The 3-digit approach of Nathan, Pratt and Rincon–Aznar (2015) seems to give somewhat larger estimates for the share of Creative Economy. If the same would hold true for Finland, we may assume that the share of Creative Economy in Finland would be smaller than it is in Sweden, the Netherlands and the UK but larger than it is in Germany, for example. We might conclude that the share of Support Creatives seems to be relatively small, whereas the share of Embedded Creatives seems to be relatively large in Finland.

Nathan, Pratt and Rincon–Aznar (2015) show that creative intensity turns out to be highest in Sweden (0.40 across all industries between 2011 and 2013), followed by the UK (0.37), Germany (0.36 in 2012–2013), the Netherlands (0.34), Poland (0.32), and France (0.18). According to their estimates, the UK, Netherlands and Sweden have more creative workers inside the creative industries than outside; Germany has slightly more creative workers outside creative industries than inside them; and Poland and France have substantially greater numbers of creative workers outside than inside creative industries.

Reassuringly, in all six comparator countries, the distribution of creative intensity appears to be bimodal, providing some support for the transferability of the key insight from the UK Dynamic Mapping study that creative intensity serves as a discriminator between creative and non-creative industries.

Creative Trident

The data can be arranged in a trident format with industries as columns and occupations as rows. This shows that around one-half of creative jobs were outside the creative industries in the wider creative economy. Table 9 provides a basic breakdown of the industries and occupations defined as creative. In this table, the components of creative employment are highlighted. The 54,200 jobs

[52] Nathan, M., Pratt, A. and Rincon–Aznar, A. (2015) Creative economy employment in the EU and UK: A comparative analysis. London: Nesta

in the first row and column are specialist jobs and the 67,800 in the first column and second row are embedded jobs. The remaining 36,800 in the second column and first row are support workers.

The results are qualitatively very significant: 60 per cent of those employed within the industries that we define as creative are engaged in occupations that we define as creative. This is over 17 times higher than in those industries that we do not define as creative.

Table 9. Employment in the Creative Industries in 2015.

	Occupation			
Industry	**Creative Occupa-tions**	**Other Occupations**	**Total in this industry**	**Intensity (Creatively Occupied/Total Employment in the Industry)**
Creative Industries	54 200	36 800	91 000	59.5%
Other Industries	67 800	1 939 700	2 007 500	3.4%
Total in this occupation	122 000	1 976 500	2 098 500	5.8%

It is common practice in presenting data on creative employment to divide the data into sectors or segments. Here, we first present employment in the nine creative sectors used by Nesta, as shown in Table 10.

Table 10. Intensities in creative sectors, 2015 figures.

	Creative Specialists	**Other Occupations**	**Total Occupations**	**Intensity**
Advertising and mar-keting	5 270	5 017	10 287	51%
Architecture	2 663	990	3 653	73%
Crafts	323	232	555	58%
Design: product, graphic and fashion design	1 619	561	2 180	74%
Film, TV, video, radio and photography	6 263	2 617	8 880	71%
IT, software and computer services	25 362	14 689	40 051	63%
Publishing	7 407	8 207	15 614	47%
Museums, galleries and libraries	678	435	1 113	61%
Music, performing and visual arts	4 571	4 066	8 637	53%
Total	54 156	36 814	90 970	60%

Similarly, we calculated the average salaries within these sectors for both Creative Specialists and Support Creatives. For the calculation, we required that the organisation had at least three employees. We noticed that within creative sectors there are a number of one-person firms that pay very little salary if at all. A more detailed listing of average salaries is provided in the Appendices. We show only those cases for which there is data on at least ten Business Register firm employees.

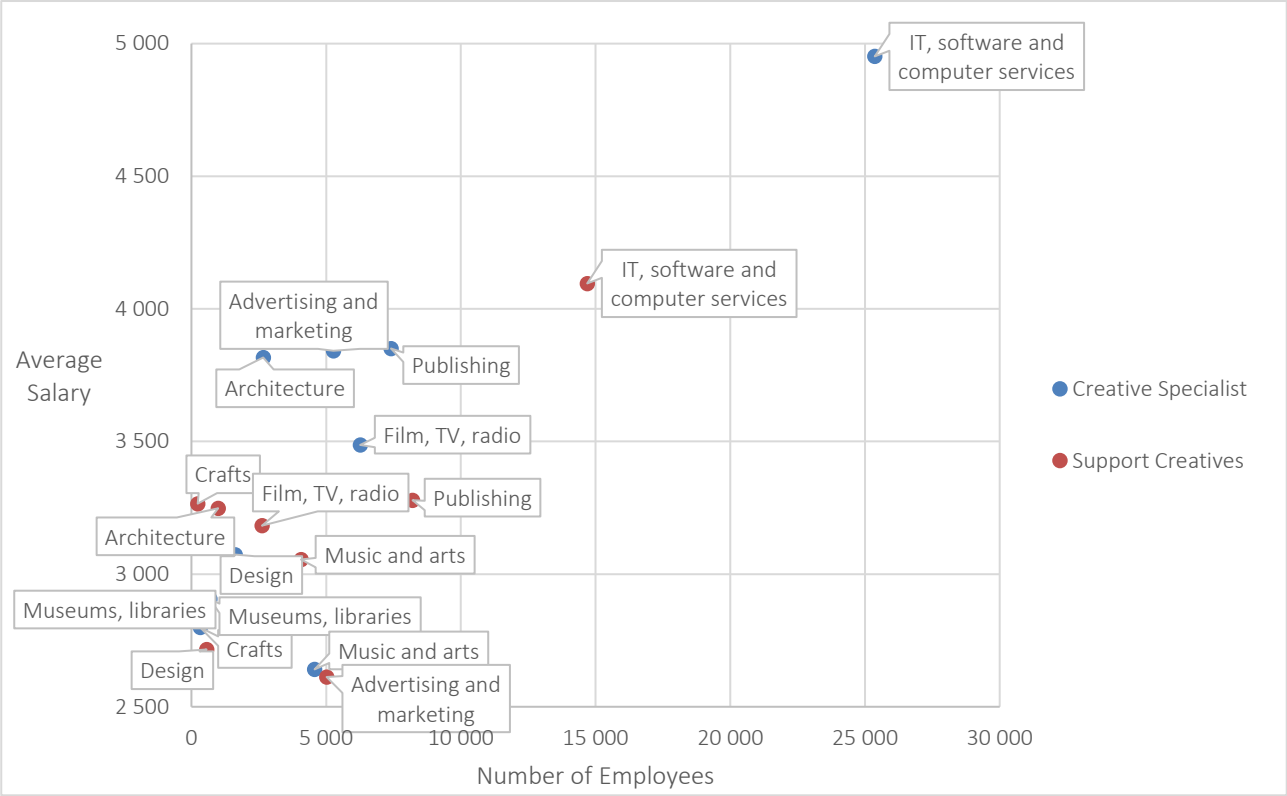

Figure 3. Number of Creative Specialists and Support Creatives in creative sectors and their average salaries in 2015 (organisations with 3 or more employees).

We make a higher level distinction between the four broad categories by using distinctive types of creative activity, which we call Creative and cultural products; Creative content; Creative services; and Creative environments and platforms. We do not need to restrict ourselves here to the Nesta categorisation of creative industries and, hence, include News agency activities (NACE code 6391) as one subcategory in Creative content, and Show production and management activities (74901) and Organisation of conventions and trade shows (8230) as two additional subcategories for the Creative services activity. Moreover, for the sake of completeness, we include all the remaining industry sectors from Finland's official Cultural Statistics and the Ministry of Economic Affairs and Employment report on creative industry firms in the category 'Others' in Table 11. A full list of occupation and industry codes used is given in Appendices Creative occupations and Creative industries, respectively.

Table 11. Intensities in four creative categories, 2015 figures.

Category	Number of actors	Turnover (1000 €)	Creative occupations (number of employees)	Non-creative occupations (number of employees)	Creative intensity
Creative and cultural products	3 954	583 199	4 983	4 333	53%
Creative content	2 871	3 663 245	11 223	10 497	52%
Creative services	10 071	2 562 860	12 666	7 151	64%
Creative environments and platforms	7 079	8 733 445	26 236	17 082	61%
Others	1 432	740 554	438	3 718	11%

Table 12 shows the employment in creative industry categories as a proportion of total Creative Economy employment. The low proportion of 'cross-employment' (one type of creative occupation in another type of creative industry) suggests that, just as the creative industries are themselves a specialised employer of creative talent, each broad category specialises in a particular type of talent within the creative industries.

Table 12. Employment in creative industry categories as a proportion of total Creative Economy employment 2015.

Category	Creative and cultural products industries	Creative content industries	Creative services industries	Creative environments and platforms industries	Others	Creative Industries	Embedded Creatives	Total
Creative and cultural products occupations	2.4%	0.5%	0.1%	0.0%	0.1%	3.1%	6.4%	9.5%
Creative content occupations	0.4%	5.3%	0.8%	0.3%	0.1%	6.9%	3.1%	10.0%
Creative service occupations	0.1%	1.9%	5.5%	0.2%	0.1%	7.8%	16.2%	24.0%
Creative environments and platforms occupations	0.0%	0.1%	1.1%	14.3%	0.0%	15.6%	14.9%	30.5%
Creative Specialists Total	2.9%	7.8%	7.5%	14.9%	0.3%	33.4%	40.6%	74.0%
Support Creatives	2.6%	6.4%	4.3%	10.4%	2.3%	26.0%	0.0%	26.0%
Total	5.5%	14.2%	11.9%	25.2%	2.5%	59.4%	40.6%	100.0%

Growth of the Creative Economy

The classification change in the SIC codes with the shift to SIC10, implemented in the 2011 data, led us to restrict our historical analysis for the years 2011 through 2015. **Error! Reference source not found.**Figure 4 shows the average annual employment and salary growth rates over the period 2011-2015. It shows that the economic recession also hit the creative economy. In many cases, the number of creative industry employees has decreased. However, Creative Specialists managed to do better than the Support Creatives in general.

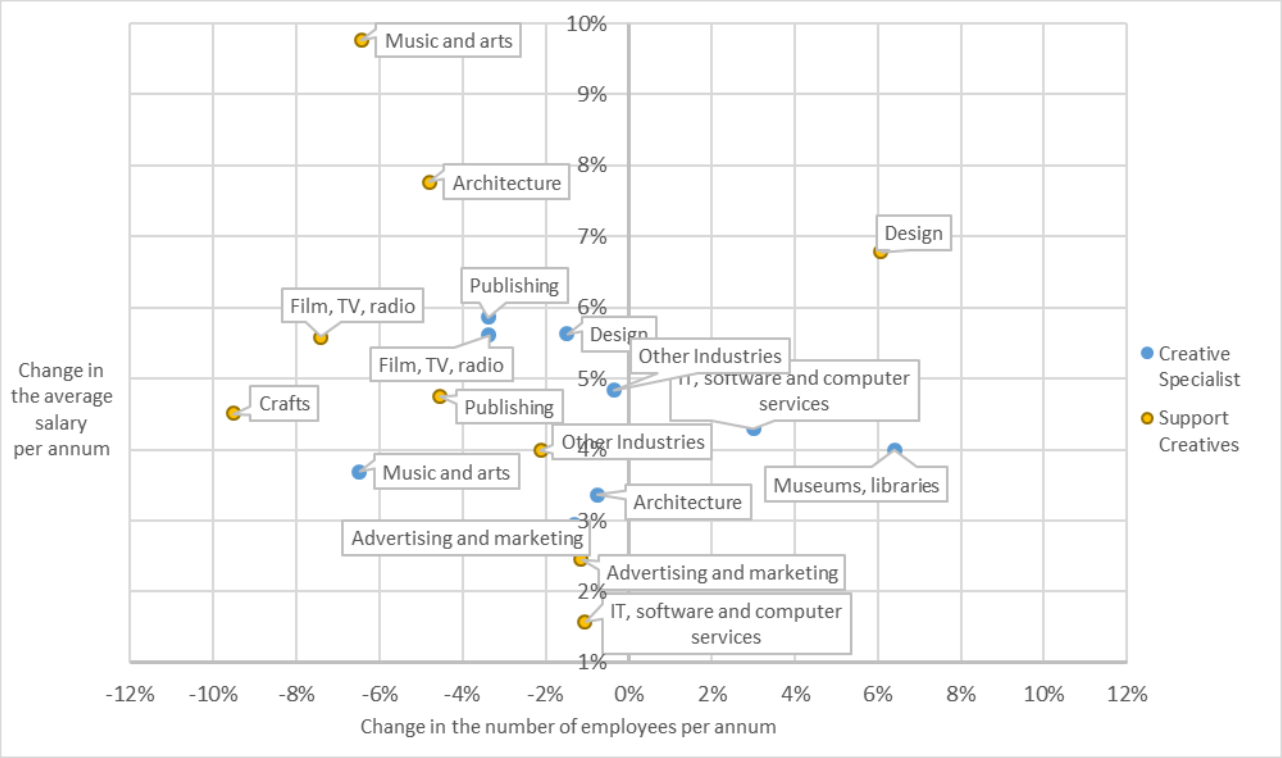

Figure 4. Employment and salary growth in the main Creative Economy components (average percentage change on previous year from 2011 to 2015).

Regional geography of Finland's Creative Economy

Table 13 presents the size of the different components of the creative economy and the workforce as a whole for Finland's 19 regions in 2015.

Table 13. Creative Economy employment in Finland's regions in 2015.

Region	Specialist	Support	Creative Industries	Embedded	Creative Occupa-tions	Creative Economy	Workforce
Uusimaa	32 948	20 482	53 430	36 808	69 756	90 238	738 851
Varsinais-Suomi	2 909	2 214	5 123	3 673	6 582	8 796	165 716
Satakunta	698	701	1 399	1 235	1 933	2 634	78 648
Kanta-Häme	708	717	1 425	1 055	1 763	2 480	56 515
Pirkanmaa	5 670	3 377	9 047	4 588	10 258	13 635	179 128
Päijät-Häme	769	826	1 595	1 341	2 110	2 936	58 247
Ky-menlaakso	570	384	954	990	1 560	1 944	55 389
Etelä-Karjala	577	443	1 020	873	1 450	1 893	42 977
Etelä-Savo	448	801	1 249	886	1 334	2 135	48 099
Pohjois-Savo	838	796	1 634	1 940	2 778	3 574	81 929
Pohjois-Karjala	608	462	1 070	917	1 525	1 987	52 271

Keski-Suomi	1 738	1 445	3 183	2 409	4 147	5 592	90 752
Etelä-Pohjanmaa	423	479	902	988	1 411	1 890	63 498
Pohjanmaa	902	657	1 559	1 531	2 433	3 090	70 045
Keski-Pohjanmaa	298	256	554	359	657	913	25 795
Pohjois-Pohjanmaa	2 433	1 552	3 985	3 234	5 667	7 219	136 825
Kainuu	256	269	525	406	662	931	23 672
Lappi	505	271	776	1 050	1 555	1 826	59 396
Ahvenanmaa - Åland	271	186	457	216	487	673	10 823
No location information	587	496	1 083	3 265	3 852	4 348	59 893
Finland, total	54,156	36,814	90,970	67,764	121,920	158,734	2,098.469

It can be seen that the creative economy workforce is heavily concentrated in the capital area in Finland. Uusimaa accounts for 57 per cent of employment in the creative economy. The case is very similar in the UK; together London and the South East of England region account for 43 per cent of employment in the creative economy in the UK.

Table 14 presents the different components of the creative economy as shares of the regional workforce. The particular importance of the creative economy to the capital area's economy is apparent in this table. The creative economy's share of Uusimaa's workforce – at 12.2 per cent – is almost double the national figure. Creative occupations in the creative industries are also a high proportion of the creative economy, at 37 per cent (=4.5/12.2). Only Pirkanmaa and Ahvenanmaa reach higher proportions at 42 and 40 per cent, respectively.

Table 14. Workforce shares of the components of the Creative Economy.

Region	Specialist	Non-specialist	Creative Industries	Embedded	Creative Occupations	Creative Economy
Uusimaa	4.5%	2.8%	7.2%	5.0%	9.4%	12.2%
Varsinais-Suomi	1.8%	1.3%	3.1%	2.2%	4.0%	5.3%
Satakunta	0.9%	0.9%	1.8%	1.6%	2.5%	3.3%
Kanta-Häme	1.3%	1.3%	2.5%	1.9%	3.1%	4.4%
Pirkanmaa	3.2%	1.9%	5.1%	2.6%	5.7%	7.6%
Päijät-Häme	1.3%	1.4%	2.7%	2.3%	3.6%	5.0%
Kymenlaakso	1.0%	0.7%	1.7%	1.8%	2.8%	3.5%
Etelä-Karjala	1.3%	1.0%	2.4%	2.0%	3.4%	4.4%
Etelä-Savo	0.9%	1.7%	2.6%	1.8%	2.8%	4.4%
Pohjois-Savo	1.0%	1.0%	2.0%	2.4%	3.4%	4.4%
Pohjois-Karjala	1.2%	0.9%	2.0%	1.8%	2.9%	3.8%
Keski-Suomi	1.9%	1.6%	3.5%	2.7%	4.6%	6.2%
Etelä-Pohjanmaa	0.7%	0.8%	1.4%	1.6%	2.2%	3.0%
Pohjanmaa	1.3%	0.9%	2.2%	2.2%	3.5%	4.4%

Keski-Pohjanmaa	1.2%	1.0%	2.1%	1.4%	2.5%	3.5%
Pohjois-Pohjanmaa	1.8%	1.1%	2.9%	2.4%	4.1%	5.3%
Kainuu	1.1%	1.1%	2.2%	1.7%	2.8%	3.9%
Lappi	0.9%	0.5%	1.3%	1.8%	2.6%	3.1%
Ahvenanmaa - Åland	2.5%	1.7%	4.2%	2.0%	4.5%	6.2%
No loc. information	1.0%	0.8%	1.8%	5.5%	6.4%	7.3%
Finland	2.6%	1.8%	4.3%	3.2%	5.8%	7.6%

Creative workforce shares may be helpfully analysed using location quotients (LQs). These are defined for the creative economy as the creative workforce share of the region (CE_R/WF_R) divided by the creative workforce share of the national workforce (CE_{FI}/WF_{FI}). As such, they allow us to compare how the importance of employment in particular occupations or industries in a region compares with their importance in the country as a whole. An LQ>1 means the regional workforce is more concentrated than the national workforce, an LQ=1 means that the concentration is the same, and an LQ<1 means that it is less concentrated than the national workforce.

The table of location quotients is calculated by simply dividing every regional row of Table 14 by the corresponding Finland row, yielding Table 15.

Table 15. Location quotients of the Creative Economy and its components in Finland's regions.

Region	Specialist	Non-specialist	Creative Industries	Embedded	Creative Occupations	Creative Economy
Uusimaa	1.73	1.58	1.67	1.54	1.62	1.61
Varsinais-Suomi	0.68	0.76	0.71	0.69	0.68	0.70
Satakunta	0.34	0.51	0.41	0.49	0.42	0.44
Kanta-Häme	0.49	0.72	0.58	0.58	0.54	0.58
Pirkanmaa	1.23	1.07	1.17	0.79	0.99	1.01
Päijät-Häme	0.51	0.81	0.63	0.71	0.62	0.67
Kymenlaakso	0.40	0.40	0.40	0.55	0.48	0.46
Etelä-Karjala	0.52	0.59	0.55	0.63	0.58	0.58
Etelä-Savo	0.36	0.95	0.60	0.57	0.48	0.59
Pohjois-Savo	0.40	0.55	0.46	0.73	0.58	0.58
Pohjois-Karjala	0.45	0.50	0.47	0.54	0.50	0.50
Keski-Suomi	0.74	0.91	0.81	0.82	0.79	0.81
Etelä-Pohjanmaa	0.26	0.43	0.33	0.48	0.38	0.39
Pohjanmaa	0.50	0.53	0.51	0.68	0.60	0.58
Keski-Pohjanmaa	0.45	0.57	0.50	0.43	0.44	0.47
Pohjois-Pohjanmaa	0.69	0.65	0.67	0.73	0.71	0.70
Kainuu	0.42	0.65	0.51	0.53	0.48	0.52
Lappi	0.33	0.26	0.30	0.55	0.45	0.41
Ahvenanmaa - Åland	0.97	0.98	0.97	0.62	0.77	0.82

There are, however, remarkable variations between creative industries among the regions. A detailed presentation of these is given in Appendix Breakdown by region. In Table 16, we list those creative industries where the region's location quotient belongs to the top three, if any. We require

that there are at least ten employees within the industry in the region in order to qualify for the comparison.

Table 16. The highest location quotients of the creative industries within Finnish regions.

Region	Creative Industries with high location quotients
Uusimaa	Advertising and marketing, Architecture, Crafts, Museums and galleries
Varsinais-Suomi	Advertising and marketing, Crafts, Design
Kanta-Häme	Crafts
Pirkanmaa	IT and software, Museums and galleries
Päijät-Häme	Architecture
Kymenlaakso	Music, performing and visual arts
Etelä-Savo	Design, Publishing, Museums and galleries
Pohjanmaa	Design, TV and radio
Keski-Pohjanmaa	TV and radio, Publishing, Music, performing and visual arts
Pohjois-Pohjanmaa	Architecture, IT and software
Kainuu	Advertising and marketing
Lappi	TV and radio, Music, performing and visual arts
Ahvenanmaa - Åland	IT and software, Publishing

Exports

The number of exporting firms and their export revenue in 2015 is presented in Table 17. The turnover figure covers Business Register firms only. For an exporting firm, we include those firms that export over 12,000 € per year. The export column shows the combined exports of the exporting firms. This covers over 99% of all exports in general. Others include those industries that are included in the Ministry of Economic Affairs and Employment report but not in our classification (see Table 23 in the Appendices).

Table 17. Number of Finnish exporting firms and their export revenues in the five creative sectors.

Category	Number of actors	Turnover (1000 €)	Number of exporting firms	Exports (1000 €)
Creative and cultural products	3 954	583 199	15	23 945
Creative content	2 871	3 663 245	11	10 173
Creative services	10 071	2 562 860	1	65
Creative environments and platforms	7 079	8 733 445	64	37 111
Others	1 432	740 554	33	35 980

Almost all of the exports in the Creative and cultural products category are produced by one firm operating in the Striking of coins industry (3211). The highest number of exporting firms, eight, is in the Manufacture of jewellery and related articles industry (3212). Exports within the creative content category are widely distributed among the eleven firms, with no single firm standing out. Surprisingly, there is almost no exporting activity within the creative services category.

Within the creative environments and platforms category, the highest number of exporting firms are in Computer programming activities (6201) where there are 49 exporting firms with a total export revenue of 28.1 million euros. In Computer consultancy activities (6202) there are 8 exporting firms

with a total export revenue of 6.2 million euros. It is worth noting that in the industry sector Publishing of computer games (5821) there were no exporting firms in 2015.

In the category Others, almost all exports, and with about equal shares, come from two industry sectors, Manufacture of consumer electronics and Wholesale of radio and television goods.

Appendices

Creative occupations

Table 18. Creative occupations.

AMT2010	AMT2010 Description
1221	Sales and marketing managers
1222*	Advertising and public relations managers
1330	Information and communications technology service managers
2161	Building architects
2162	Landscape architects
2163	Product and garment designers
2164	Town and traffic planners
2166	Graphic and multimedia designers
2431	Advertising and marketing professionals
2432	Public relations professionals
2511	Systems analysts
2512	Software developers
2513	Web and multimedia developers
2514	Applications programmers
2519	Software and applications developers and analysts not elsewhere classified
2521*	Database designers and administrators
2522*	Systems administrators
2523*	Computer network professionals
2529*	Database and network professionals not elsewhere classified
2621	Archivists and curators
2622	Librarians and related information professionals
2641	Authors and related writers
2642	Journalists
2643	Translators, interpreters and other linguists
2651	Visual artists
2652	Musicians, singers and composers
2653	Dancers and choreographers
2654	Film, stage and related directors and producers
2655	Actors

2656	Announcers on radio, television and other media
2659	Creative and performing artists not elsewhere classified
3431	Photographers
3432	Interior designers and decorators
3433	Gallery, museum and library technicians
3435	Other artistic and cultural associate professionals
3521*	Broadcasting and audio-visual technicians
7311	Precision-instrument makers and repairers
7312	Musical instrument makers and tuners
7313	Jewellery and precious-metal workers
7314	Potters and related workers
7315	Glass makers, cutters, grinders and finishers
7316	Sign writers, decorative painters, engravers and etchers
7317	Handicraft workers in wood, basketry and related materials
7318	Handicraft workers in textile, leather and related materials
7319	Handicraft workers not elsewhere classified
7531*	Tailors, dressmakers, furriers and hatters
7532*	Garment and related pattern-makers and cutters
7533*	Sewing, embroidery and related workers

* = not in Finland's official Cultural Statistics[53]

Creative industries

Table 19. Creative industries.

NACE	Industry description
3211*†	Striking of coins
3212*†	Manufacture of jewellery and related articles
3213*†	Manufacture of imitation jewellery and related articles
5811	Book publishing
5812*†	Publishing of directories and mailing lists
5813†	Publishing of newspapers
5814†	Publishing of journals and periodicals
5819*†	Other publishing activities
5821	Publishing of computer games
5829*†	Other software publishing
5911	Motion picture, video and television programme production activities
5912	Motion picture, video and television programme post-production
5913	Motion picture, video and television programme distribution
5914	Motion picture projection activities
5920	Sound recording and music publishing activities
6010†	Radio broadcasting
6020	Television programming and broadcasting activities

[53] Statistics Finland. (2016) Kulttuurityövoima Suomessa 2015, Liitetaulukko 2. Kulttuuriammatit vuoden 2010 ammattiluokituksen mukaan. Helsinki: http://www.stat.fi/til/klt/2015/01/klt_2015_01_2016-08-31_tau_002_fi.html

6201	Computer programming activities
6202†	Computer consultancy activities
6312*†	Web portals
7021*†	Public relations and communication activities
7111	Architectural activities
7311	Advertising agencies
7312†	Media representation
7410	Specialised design activities
7420†	Photographic activities
7430†	Translation and interpretation activities
8552*†	Cultural education
9001	Performing arts
9002	Support activities to performing arts
9003	Artistic creation
9004	Operation of arts facilities
9101†	Library and archive activities
9102*	Museum activities
9103*†	Operation of historical sites and buildings and similar visitor attractions

* = not in Finland's official Cultural Statistics[54]
† = not in the Ministry of Economic Affairs and Employment report about creative industry firms[55]

Table 20. Industries included in the Finland's official Cultural Statistics but not in our classification.

NACE	Industry description	Creative Specialists	Support Creatives	Creative Intensity
18110	Printing of newspapers	2	83	2%
18120	Other printing	159	2 564	6%
3240	Manufacture of games and toys	35	125	22%
46433	Wholesale of photographic equipment and supplies	10	58	15%
46491	Wholesale of stationary and other office supplies	25	629	4%
46496	Wholesale of toys and games	10	113	8%
4743	Retail sale of audio and video equipment in specialised stores	24	688	3%
47782	Retail sale of photographic equipment; photography services	20	287	7%
47593	Retail sale of rubber and plastic goods	1	89	1%
47621	Retail sale of stationary and office supplies	5	215	2%
4765	Retail sale of games and toys in specialised stores	3	195	2%
63910	News agency activities	27	9	75%
82300	Organisation of conventions and trade shows	139	515	21%
92000	Gambling and betting activities	148	433	25%

[54] Statistics Finland. (2016) Kulttuurityövoima Suomessa 2015, Liitetaulukko 1. Kulttuuritoimialat vuoden 2008 toimialaluokituksen mukaan. Helsinki. http://www.stat.fi/til/klt/2015/01/klt_2015_01_2016-08-31_tau_001_fi.html

[55] Ministry of Economic Affairs and Employment. (2013) Julkinen rahoitus luovien alojen yrityksissä, Työ- ja elinkeinoministeriön julkaisuja 26/2013

93210	Activities of amusement parks and theme parks	10	676	1%
93299	Amusement and recreation activities n.e.c.	39	541	7%
	Total	**657**	**7 220**	**8%**

Table 21. Industries included in both Finland's official Cultural Statistics and in the Ministry of Economic Affairs and Employment report but not in our classification.

NACE	Industry description	Creative Specialists	Support Creatives	Creative Intensity
18130	Pre-press and pre-media services	70	420	14%
18140	Binding and related services	2	72	3%
26400	Manufacture of consumer electronics	3	160	2%
46492	Wholesale of books	12	205	6%
47610	Retail sale of books in specialised stores	17	1 086	2%
47781	Retail sale of art; art gallery activities	71	50	59%
47791	Antiques shops	1	88	1%
47792	Second-hand bookshops	3	120	2%
47911	Retail sale of books, music and video recordings via mail order houses and net commerce	7	75	9%
74901	Show production and management activities	623	1 334	32%
	Total	**809**	**3 610**	**18%**

Table 22. Industries included in the Ministry of Economic Affairs and Employment report but not in our classification.

NACE	Industry description	Creative Specialists	Support Creatives	Creative Intensity
18200	Reproduction of recorded media	79	41	66%
32200	Manufacture of musical instruments	75	15	83%
46432	Wholesale of radio and television goods	56	493	10%
46494	Wholesale of musical instruments and supplies	10	121	8%
47595	Retail sale of musical equipment and supplies	10	170	6%
47630	Retail sale of music and video recordings in specialised stores	8	128	6%
47793	Auction houses	9	66	12%
77220	Renting of video tapes and disks	5	408	1%
	Total	**252**	**1 442**	**15%**

Table 23. The five sectors of creative industries.

NACE	Industry sectors included	Number of actors	Turnover (1000 €)	Creative occupations (number of employees)	Non-creative occupations (number of employees)	Creative intensity
3211	Striking of coins	7	49 493	9	62	13%

3212	Manufacture of jewellery and related articles	282	62 546	275	164	63%
3213	Manufacture of imitation jewellery and related articles	53	7 232	39	6	87%
8552	Cultural education	440	31 811	679	1 500	31%
9001	Performing arts	1 108	87 018	2 184	1 022	68%
9002	Support activities to performing arts	572	257 950	488	740	40%
9003	Artistic creation	1 424	72 281	631	404	61%
9101	Library and archive activities	19	7 268	143	226	39%
9102	Museum activities	46	7 600	514	205	71%
9103	Operation of historical sites and buildings and similar visitor attractions	3	NA	21	4	84%
Creative and cultural products total		**3 954**	**583 199**	**4 983**	**4 333**	**53%**
5811	Book publishing	281	320 142	837	630	57%
5812	Publishing of directories and mailing lists	22	168 108	138	759	15%
5813	Publishing of newspapers	285	1 289 497	2 920	4 588	39%
5814	Publishing of journals and periodicals	268	574 057	1 300	1 424	48%
5819	Other publishing activities	207	98 215	132	463	22%
5911	Motion picture, video and television programme production activities	913	277 363	1 710	775	69%
5912	Motion picture, video and television programme post-production	84	15 324	133	67	67%
5913	Motion picture, video and television programme distribution	27	92 460	31	56	36%
5914	Motion picture projection activities	62	108 077	161	499	24%
5920	Sound recording and music publishing activities	581	130 726	531	222	71%
6010	Radio broadcasting	49	42 258	211	139	60%
6020	Television programming and broadcasting activities	49	524 636	2 983	841	78%
6391	News agency activities	43	22 382	136	34	80%
Creative content total		**2 871**	**3 663 245**	**11 223**	**10 497**	**52%**

7021	Public relations and communication activities	729	120 901	308	790	28%
7111	Architectural activities	1 407	388 462	2 663	990	73%
7311	Advertising agencies	3 273	1 526 685	4 866	3 939	55%
7312	Media representation	140	49 825	96	288	25%
7410	Specialised design activities	2 058	214 753	1 619	561	74%
7420	Photographic activities	1 218	113 364	1 034	240	81%
7430	Translation and interpretation activities	1 246	148 870	2 080	343	86%
Creative services total		**10 071**	**2 562 860**	**12 666**	**7 151**	**64%**
5821	Publishing of computer games	19	23 646	142	60	70%
5829	Other software publishing	65	517 036	713	791	47%
6201	Computer programming activities	3 811	6 388 087	19 654	10 121	66%
6202	Computer consultancy activities	1 721	1 285 761	4 613	3 437	57%
6312	Web portals	229	75 795	240	280	46%
74901	Show production and management activities	961	227 510	623	1 334	32%
8230	Organisation of conventions and trade shows	263	188 561	193	881	18%
9004	Operation of arts facilities	10	27 049	58	178	25%
Creative environments and platforms total		**7 079**	**8 733 445**	**26 236**	**17 082**	**61%**
1813	Pre-press and pre-media services	160	50 673	70	420	14%
1814	Binding and related services	39	5 813	2	72	3%
1820	Reproduction of recorded media	123	13 571	79	41	66%
2640	Manufacture of consumer electronics	29	24 926	3	160	2%
3220	Manufacture of musical instruments	88	7 145	75	15	83%
4761	Retail sale of books in specialised stores	164	170 095	17	1 086	2%
4763	Retail sale of music and video recordings in specialised stores	53	13 782	8	128	6%
7722	Renting of video tapes and disks	18	21 501	5	408	1%
46432	Wholesale of radio and television goods	133	192 065	56	493	10%

46492	Wholesale of books	16	72 320	12	205	6%
46494	Wholesale of musical instruments and supplies	31	36 905	10	121	8%
47595	Retail sale of musical equipment and supplies	118	36 696	10	170	6%
47781	Retail sale of art; art gallery activities	173	13 784	71	50	59%
47791	Antiques shops	120	15 734	1	88	1%
47792	Second-hand bookshops	115	9 024	3	120	2%
47793	Auction houses	21	16 249	9	66	12%
47911	Retail sale of books, music and video recordings via mail order houses and net commerce	31	40 271	7	75	9%
Others total		**1 432**	**740 554**	**438**	**3 718**	**11%**

Breakdown per region

Uusimaa	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	3 274	3 393	49%	4 216	1	17	1	1,2	3
Architecture	1 577	540	74%	3 957	1	5	1	1,1	3
Crafts	134	153	47%	2 744	1	16	2	1,0	3
Design: product, graphic and fashion design	943	343	73%	3 325	1	14	2	1,2	4
Film, TV, video, radio and photography	4 398	1 900	70%	3 662	1	12	1	1,0	9
IT, software and computer services	15 648	7 794	67%	5 204	1	2	1	1,0	6
Publishing	4 109	4 004	51%	4 004	1	7	4	1,0	14
Museums and galleries	462	201	70%	2 920	1	3	2	1,2	3
Music, performing and visual arts	282	241	54%	2 772	1	11	5	0,9	12
Other industries	36 808	648 613	5%	4 830	1	1	1	0,9	18

Varsinais-Suomi	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	460	357	56%	3 743	2	10	2	1,4	2
Architecture	159	46	78%	3 900	4	2	2	1,0	4
Crafts	39	6	87%		2	14		1,5	2
Design: product, graphic and fashion design	143	46	76%	3 442	2	10	1	1,2	3
Film, TV, video, radio and photography	196	65	75%	2 845	3	9	17	0,7	16
IT, software and computer services	1 100	829	57%	4 091	4	8	11	0,8	9
Publishing	505	595	46%	3 483	3	10	16	1,2	10
Museums and galleries	25	29	46%	2 732	4	7	5	0,6	5
Music, performing and visual arts	97	45	68%	2 869	3	9	4	1,0	11
Other industries	3 673	156 920	2%	3 885	3	7	8	1,0	13

Satakunta	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	86	76	53%	2 566	7	15	18	0,8	5
Architecture	24	6	80%		12	1			
Crafts	6	0	100%		12	1			
Design: product, graphic and fashion design	33	8	80%		8	8			
Film, TV, video, radio and photography	80	19	81%	2 650	8	6	18	1,0	8
IT, software and computer services	215	238	47%	4 345	12	17	6	0,6	14
Publishing	156	309	34%	3 915	8	17	5	1,3	4
Museums and galleries	1	0	100%	3 352	13	1	1		
Music, performing and visual arts	105	135	44%	2 457	15	1	10	1,4	7
Other industries	1 235	76 014	2%	3 683	7	17	13	1,2	7

Kanta-Häme	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	56	47	54%	2 785	13	11	13	0,4	16
Architecture	17	8	68%		16	12			
Crafts	29	48	38%	3 888	3	18	1	10,1	1
Design: product, graphic and fashion design	27	4	87%		10	4			

Film, TV, video, radio and photography	79	66	54%	3 175	9	17	10	1,1	6
IT, software and computer services	270	222	55%	4 113	9	10	10	0,8	11
Publishing	112	180	38%	3 765	12	16	9	0,9	15
Museums and galleries	13	7	65%	2 834	6	5	4	1,1	4
Music, performing and visual arts	551	486	53%	3 490	4	14	2	1,2	10
Other industries	1 055	54 035	2%	3 925	12	11	7	1,1	8

Pirkanmaa	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	357	312	53%	2 915	3	14	6	0,7	9
Architecture	237	111	68%	3 441	2	11	9	0,9	6
Crafts	22	0	100%		4	1			
Design: product, graphic and fashion design	117	40	75%	2 836	3	12	4	0,9	5
Film, TV, video, radio and photography	521	167	76%	3 484	2	7	5	1,5	4
IT, software and computer services	3 174	1 668	66%	4 428	2	3	4	1,3	2
Publishing	595	551	52%	3 798	2	6	7	0,9	17
Museums and galleries	96	42	70%	2 876	2	4	3	1,6	2
Music, performing and visual arts	69	115	38%	2 561	2	10	9	1,4	6
Other industries	4 588	165 493	3%	4 017	2	3	4	0,8	19

Päijät-Häme	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	106	92	54%	2 893	6	13	7	0,8	4
Architecture	71	35	67%	3 462	6	13	8	1,3	2
Crafts	18	0	100%		5	1			
Design: product, graphic and fashion design	49	10	83%		5	7			
Film, TV, video, radio and photography	71	34	68%	3 227	10	14	8	0,9	13
IT, software and computer services	242	183	57%	4 538	11	9	3	0,6	12
Publishing	143	355	29%	3 474	10	18	17	1,0	13
Museums and galleries	0	2	0%		15	15			
Music, performing and visual arts	140	98	59%	3 753	7	17	1	0,7	15
Other industries	1 341	55 311	2%	4 227	11	6	2	1,2	4

Kymenlaakso	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	61	34	64%	2 715	11	1	15	0,8	6
Architecture	25	10	71%	3 877	11	7	3	0,5	11
Crafts	8	0	100%		9	1			
Design: product, graphic and fashion design	18	1	95%		14	3			
Film, TV, video, radio and photography	62	22	74%	3 140	12	10	11	0,9	11
IT, software and computer services	150	109	58%	3 728	14	7	15	0,5	16
Publishing	106	110	49%	3 815	15	9	6	1,2	9
Museums and galleries									
Music, performing and visual arts	26	46	36%	1 850	10	6	15	2,7	1
Other industries	990	53 445	2%	3 880	13	13	9	1,1	9

Etelä-Karjala	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ

Advertising and marketing	32	37	46%	2 777	17	18	14	0,4	17
Architecture	30	9	77%	3 554	10	3	6	0,9	7
Crafts	4	0	100%		14	1			
Design: product, graphic and fashion design	16	8	67%		15	15			
Film, TV, video, radio and photography	49	22	69%	3 485	15	13	4	0,9	10
IT, software and computer services	297	174	63%	4 369	8	5	5	1,1	5
Publishing	94	94	50%	4 094	16	8	2	1,0	12
Museums and galleries									
Music, performing and visual arts	63	108	37%	2 684	14	19	6	0,5	17
Other industries	873	41 084	2%	3 925	16	10	6	1,0	14

Etelä-Savo	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	50	42	54%	2 786	14	12	12	0,7	10
Architecture	20	12	63%		15	15		0,4	12
Crafts	6	0	100%		12	1			
Design: product, graphic and fashion design	24	12	67%		11	15		2,6	1
Film, TV, video, radio and photography	37	12	76%	3 246	17	8	7	0,7	14
IT, software and computer services	93	94	50%	3 379	16	15	18	0,3	17
Publishing	148	497	23%	3 634	9	19	13	1,6	1
Museums and galleries	29	53	35%		3	10		3,9	1
Music, performing and visual arts	65	51	56%	2 635	8	18	7	1,5	4
Other industries	886	45 964	2%	3 747	15	12	12	1,2	6

Pohjois-Savo	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	85	59	59%	2 683	8	7	17	0,6	12
Architecture	43	19	69%	2 887	8	9	11	0,5	10
Crafts	10	12	45%		7	17			
Design: product, graphic and fashion design	36	12	75%		7	11			
Film, TV, video, radio and photography	67	40	63%	2 870	11	16	16	0,7	15
IT, software and computer services	318	412	44%	3 756	7	18	14	0,6	13
Publishing	208	184	53%	3 489	6	5	15	1,3	6
Museums and galleries	7	24	23%		7	14			
Music, performing and visual arts	88	64	58%	2 395	13	8	11	0,5	16
Other industries	1 940	78 355	2%	3 830	6	5	10	1,2	3

Pohjois-Karjala	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	39	35	53%	2 805	16	16	11	0,4	18
Architecture	22	10	69%		13	10		0,3	13
Crafts	2	0	100%		16	1			
Design: product, graphic and fashion design	24	4	86%		11	5			
Film, TV, video, radio and photography	55	12	82%	3 040	13	5	12	0,9	12
IT, software and computer services	262	237	53%	3 794	10	14	13	0,9	7
Publishing	110	83	57%	3 088	13	2	19	1,2	7
Museums and galleries	6	7	46%		9	8			
Music, performing and visual arts	139	135	51%	2 223	11	7	14	1,4	5

Other industries	917	50 284	2%	3 269	14	15	18	1,1	11

Keski-Suomi	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	173	109	61%	2 866	5	3	8	0,8	7
Architecture	85	26	77%	3 477	5	4	7	0,7	8
Crafts	7	1	88%		10	13			
Design: product, graphic and fashion design	45	14	76%		6	9			
Film, TV, video, radio and photography	96	20	83%	3 190	6	4	9	0,4	19
IT, software and computer services	957	838	53%	4 213	5	13	8	1,2	4
Publishing	233	295	44%	3 498	5	14	14	0,8	18
Museums and galleries	6	17	26%		9	13			
Music, performing and visual arts	75	99	43%	3 327	4	13	3	0,7	14
Other industries	2 409	85 160	3%	3 768	5	2	11	1,1	12

Etelä-Pohjanmaa	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	60	42	59%	2 840	12	8	10	0,6	11
Architecture	32	17	65%	3 018	9	14	10	0,6	9
Crafts	1	0	100%		17	1			
Design: product, graphic and fashion design	16	3	84%	2 869	15	6	3		
Film, TV, video, radio and photography	45	50	47%	2 599	16	19	19	0,6	17
IT, software and computer services	80	127	39%	4 333	18	19	7	0,2	18
Publishing	114	141	45%	4 018	11	12	3	1,1	11
Museums and galleries	29	26	53%	2 238	9	15	13		
Music, performing and visual arts	988	61 608	2%	3 482	9	18	16	1,4	8
Other industries	60	42	59%	2 840	12	8	10	1,4	1

Pohjanmaa	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	84	49	63%	3 084	9	2	4	0,6	13
Architecture	52	32	62%	3 590	7	17	5	1,0	5
Crafts	7	0	100%		10	1			
Design: product, graphic and fashion design	33	19	63%		8	17		1,7	2
Film, TV, video, radio and photography	137	67	67%	3 620	5	15	2	1,9	2
IT, software and computer services	375	310	55%	4 061	6	11	12	0,6	15
Publishing	185	154	55%	3 780	7	3	8	1,2	8
Museums and galleries	3	7	30%		11	12			
Music, performing and visual arts	37	18	67%		16	12			
Other industries	1 531	66 955	2%	3 648	8	8	14	1,2	5

Keski-Pohjanmaa	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	19	12	61%	2 842	18	4	9	0,5	15
Architecture	6	8	43%		18	19			
Crafts	1	0	100%		17	1			
Design: product, graphic and fashion design	5	0	100%		17	1			
Film, TV, video, radio and photography	51	10	84%	2 893	14	3	15	2,2	1
IT, software and computer services	92	94	49%	3 481	17	16	17	0,8	8

Publishing	80	101	44%	3 758	17	13	10	1,3	3
Museums and galleries									
Music, performing and visual arts	188	121	61%	2 624	18	2	8	1,5	3
Other industries	359	24 882	1%	3 173	17	19	19	1,0	16

Pohjois-Pohjanmaa	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	174	113	61%	3 049	4	6	5	0,5	14
Architecture	217	75	74%	3 688	3	6	4	1,6	1
Crafts	14	6	70%		6	15			
Design: product, graphic and fashion design	55	19	74%		4	13			
Film, TV, video, radio and photography	141	25	85%	2 927	4	2	14	0,5	18
IT, software and computer services	1 392	857	62%	4 186	3	6	9	1,2	3
Publishing	251	335	43%	3 687	4	15	12	0,6	19
Museums and galleries	7	13	35%		7	11			
Music, performing and visual arts	29	19	60%	1 813	6	4	16	0,8	13
Other industries	3 234	129 606	2%	4 055	4	4	3	1,0	15

Kainuu	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	41	124	25%	3 372	15	19	3	1,5	1
Architecture	10	6	63%		17	15			
Crafts	1	0	100%		17	1			
Design: product, graphic and fashion design	1	2	33%		19	19			
Film, TV, video, radio and photography	27	10	73%	3 023	18	11	13	1,3	5
IT, software and computer services	95	37	72%	2 816	15	1	19	0,8	10
Publishing	33	39	46%	4 320	19	11	1	0,9	16
Museums and galleries	1	1	50%		13	6			
Music, performing and visual arts	105	53	66%	1 645	17	5	17	1,3	9
Other industries	406	22 741	2%	3 604	18	16	15	1,1	10

Lappi	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	62	40	61%	2 708	10	5	16	0,8	8
Architecture	22	9	71%		13	8			
Crafts	10	0	100%		7	1			
Design: product, graphic and fashion design	23	14	62%		13	18			
Film, TV, video, radio and photography	94	14	87%	3 501	7	1	3	1,7	3
IT, software and computer services	76	66	54%	3 671	19	12	16	0,2	19
Publishing	110	75	59%	3 724	13	1	11	1,3	5
Museums and galleries	19	32	37%		5	9		0,0	
Music, performing and visual arts	10	15	40%	2 388	12	3	12	2,0	2
Other industries	1 050	57 570	2%	3 472	10	14	17	1,2	2

Åland	Creative Specialists	Support Creatives	Creative Intensity	Avg. Salary of Specialists	Rank: Specialists	Rank: Intensity	Rank: Salary	Location Quotient	Rank: LQ
Advertising and marketing	7	5	58%		19	9			
Architecture	4	4	50%		19	18			
Crafts	3	5	38%		15	19			
Design: product, graphic and fashion design	4	0	100%		18	1			

Film, TV, video, radio and photography	23	23	50%	3 269	19	18	6	1,1	7
IT, software and computer services	178	97	65%	4 539	13	4	2	1,3	1
Publishing	42	37	53%	3 375	18	4	18	1,4	2
Museums and galleries									
Music, performing and visual arts	70	37	65%		19	16			
Other industries	216	10 150	2%	3 998	19	9	5	1,0	17

APPENDIX 2. STAKEHOLDER INSIGHTS ON CREATIVE ECONOMY OPPORTUNITIES AND CHALLENGES

Stakeholder insights were collected via different channels of interaction (workshop 16.3.2018, interviews and VTT's online co-development tool Owela). The contributions are listed below. Workshop participants and interviewees are listed in Appendixes 3 and 4.

The viewpoints and even the definition of creative industry are many-sided and depend on the respondent. The many branches and categories discussed also mean that there are no easy 'one size fits all' solutions or tools.

On the category level (defined in Section 2.2, Table 1), the main challenges identified were:

- **Creative and cultural products**: Need for marketing, sales and business competencies and/or mediators for largely domestic markets.
- **Creative content**: Need for distribution channels and marketing content for international markets.
- **Creative services** & **Creative environments and platforms**: Contacts, networks and funding for growth and internationalisation.

Figure 1. Creative Economy opportunities and challenges based on stakeholder workshop and interviews.

At a more detailed level, the following issues were identified:

1. **Mixing multidisciplinary competencies in education and work life**

    - Multidisciplinary competencies and cooperation between different competence areas are sought for and should be taken into account also within the funding models and indicators of educational establishments. Several good examples of various kinds of cooperation have been implemented, such as labs and factories at a number of different universities and universities of applied sciences.
    - Internationalisation, lifelong learning and precision education are required to meet the needs of ever accelerating evolving competencies and global operation.
    - Interaction between different stakeholders with multidisciplinary competencies during both student life and working life was perceived to be effective in creating new solutions.

2. **Scalability; test beds, platforms, hubs**

    - Some digitalised branches are born global, as the world has become ‘smaller’ due to digitalisation and improved logistics; creative services in particular can, and have, been scaled up.
    - Cities are important actors as platforms and initiators of creative area service development and use. Best methods, models and solutions can be spread to other cities and municipalities, scaled to regional and/or global levels of operation. There are usually twofold objectives; cities as testbeds for solutions to be scaled up, and cities/regions as hubs attracting global investment.

3. **Common spaces for cooperation, physical or virtual**

    - Certain branches, such as the film industry, benefit from areal coordination in collecting and creating coordinated offerings for national and international productions.
    - Common spaces of cooperation, either physical or virtual are needed: communities of different kinds of actors in the same space, e.g. start-up and scale-up accelerators and city platforms. These can also be user or hobby communities, such as exist in the digital games area.

4. **Openness between actors**

    - In many areas, cooperation within Finland is surprisingly open, which has been one key factor in achieving good results in innovating. Experiences have been shared in many branches, e.g. within the gaming industry.
    - However, IPR questions will become increasingly important to prevent leaking of business opportunities, especially if the growth rate in the area declines.

5. **Ecosystem thinking cross sectors**

    - Must evolve from the grassroots level up, not identified and labelled by policy-makers.
    - Instead of thinking at the level of creative individuals, companies or branches, the mind-set should be broadened to ecosystem-wide thinking and individuals’ own role(s) within it (knowledge/innovation/business ecosystem). Different instruments to support different phases are needed.

6. **Sufficiency of resources (knowledge, competencies, funding)**

- Creative area actors are predominantly small, many of them entrepreneurs. Especially for these, but also for SMEs within 'non-creative' other industries, multi-sectoral cooperation requires mediators/facilitation and/or common platforms. The platforms can be either physical places, events etc. for cooperation and co-creation, or digital platforms. Digital platforms allow almost limitless scalability.
- The venture capital market works better than before and does not form barriers against early stage companies, particularly if their solutions are based on digital technology. Funding for scale-up companies is harder to get.
- Public funding is mainly project-based and lacks continuity. Its share overall has decreased and created a need for new, or newly applied, funding models for the creative industries.
- Even though there are different funding possibilities, many of the funding instruments have been focusing on product and technology development, leaving out design- or customer-oriented development.

7. Understanding of the benefits of cross-sectoral cooperation, common language

- Viewpoints differ between creative area actors: individuals, companies, industry, educational actors, research organisations and different kinds of ecosystems. The main gap is between creative individuals – who are greatly supported in many creative industry areas with personal prizes and incentives – and the creative industry ecosystems, in which competencies should support the common goal of growth and profitability. This may also require new revenue models for cross-sectoral cooperation.
- Mutual understanding of cross-sectoral competencies calls for
    - Presenting and marketing creative know-how and competencies to other industries
    - Realising their potential in 'non-creative' industries; key challenges in addition to lack of a common language include 'old school' attitudes and resistance to change.

8. New impact indicators

- Current statistical data has several shortcomings and does not represent the creative industry comprehensively.
- There is a need for more holistic measurement of creative industry impact, which is easier when outcomes are concrete.
- The impact of embedded services and design, in particular, is hard to measure, but they may have a bigger effect on overall impact.

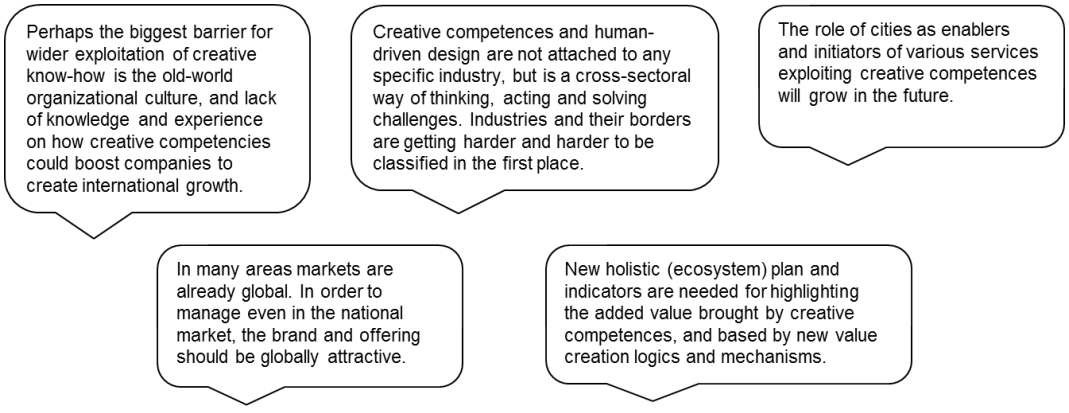

Figure 2. Some quotes from stakeholders.

Outcome slides from the stakeholder workshop:

Työpajakysymykset:

1. Millaisia uusia yhdistelmiä luovaa osaamista hyödyntäen syntyy uusille alueille?
   - Ryhmän mielestä kolme keskeisintä kasvuekosysteemiä ja/tai alueellista keskittymää,
   - *Esimerkiksi: terveys- ja hyvinvointi, ruokaketjut, kiertotalous, energia ja liikenne palveluina, media ja viestintä, kaupungit alustana , muu mikä?*
2. Millaisia hyviä käytäntöjä sekä haasteita monialaisen osaamisen kehittämiseen on Suomessa (ja muualla)?
3. Millaisia konkreettisia toimenpiteitä tarvitaan monialaisen uutta luovan kasvun mahdollistamiseksi?
   - Kuka, Kenen kanssa ja Mitä?
   - Digitalisaation mahdollistamana? Yli projektipohjaisen tekemisen?

1

Ryhmäjako & kirjurit

1. Olli Kuusisto	2. Juha Oksanen	3. Mika Naumanen	4. Tiina Valjakka	5. Katri Valkokari
Kimmo Aulake /OKM Jari-Pekka Kaleva /Neogames Anna Rikkinen /Ornamo Sanna Piiroinen /Business Finland Petteri Kolinen /Design Forum Finland Vesa Kankaanpää /Turun ammattikorkeakoulu/Media	Laura Boxberg /Frame Contemporary Art Finland Katri Lehtonen /TEM Stiina Laakso /Satu ry Taina Seitsara /Helsingin kaupunki, elinkeino-osasto Petri Sirviö /BusinessOulu	Eva-Maria Hakola /Taiteen edistämiskeskus Laura Liski /TEM Milla Moilanen /AVEK Anu-Katriina Perttunen /Creative Finland Katri Halonen /Metropolia AMK Anna Valtonen /Aalto-yliopisto	Salla Heinänen /Ornamo Petra Tarjanne /TEM Lasse Paananen /Ideone Oy / Business Finland Sanna Rekola /Tanssin Tiedotuskeskus Katri Kaalikoski /Humak Teemu Santonen /Laurea	Kirsi Kaunisharju /OKM Kati Uusi-Rauva /AGMA Irma Patala /Business Finland Riku Salomaa /Music Finland Mia Seppälä /Taideyliopisto Teija Löytönen /Aalto-yliopisto

2

1. Millaisia uusia yhdistelmiä luovaa osaamista hyödyntäen syntyy uusille alueille? Kolme keskeisintä kasvuekosysteemiä ja/tai alueellista keskittymää, esim. *terveys- ja hyvinvointi, ruokaketjut, kiertotalous, energia ja liikenne palveluina, media ja viestintä, kaupungit alustana , muu mikä?*

- **Tavoite** pitää olla korkealla → Toiminnan tulee olla tavoitteellista, ettei jää pöhinäksi; tuloksena pitää olla suomalaisten yritysten kasvu ja kansainvälinen kilpailukyky
- Luovien alojen ***osaajien kyvykkyyksien*** (luova ongelmanratkaisukyky, brändääminen, tarinat/storytelling jne.) tuominen muille toimialoille on yhä iso mahdollisuus, palvelumuotoilu on jo lyönyt läpi
- Luovien "toimialojen" sijaan laajempi ***ekosysteemiajattelu*** (innovaatioekosysteemi, kasvuekosysteemi) on relevantti, ei olla kilpailijoita
- ***Alustatalous ja jakamistalous*** murtavat rajoja ja mahdollistavat osaamisten ja erilaisten toimijoiden yhteistyön, mutta törmäyttämistä tarvitaan, kuten myös fasilitointia ja pitchauskoulutusta
- Uudet kasvumahdollisuudet
  - Kaupungit ja alueet (esim. Lappi) alustana; ei uusi ajatus, mutta miten kehitetään niin että alue voi toimia tavoitteellisena kasvualustana? Valittava kohteet, joilla on mahdollisuuksia kansainvälisessä kilpailussa
  - Terveys- ja hyvinvointialat on potentiaalinen kasvuekosysteemi
  - Matkailu on kasvussa (monesta syystä) ja siinä olisi nyt momentum kehittää kokonaisuutta

3

2. Millaisia hyviä käytäntöjä sekä haasteita monialaisen osaamisen kehittämiseen on Suomessa (ja muualla)?

- Haasteet:
  - Luovien alojen osaamista tai sen tarvetta ei tunnisteta / siitä ei osata kertoa
  - Monialaista osaamista ei osata yhdistää, puhutaan eri kieltä
  - Rahoitusta saa tuote- ja teknologiakehitykseen, mutta ei design- tai asiakaslähtöiseen kehittämiseen
  - Vaikuttavuuden mittaaminen
  - Koulutus: perinteiset tutkintorakenteet

- Hyviä käytäntöjä ja esimerkkejä
  - Koulutus: hybridikoulutus, nopeat kokeilut, "labit" ja "factoryt", kansainvälisyys, startup-valmiudet, teknologisen + kaupallisen + design-osaamisen törmäyttäminen yhteisissä (harjoitus)töissä, elinikäisen oppimisen malli (törmäyttäjä myös työelämässä olon aikana)
  - Innovaatioseteli, matala kynnys kokeilla myös design-alan palveluita
  - Kaupungit alustoina; 6aika-hankkeet hyvä alusta tehdä ja laajentaa kaupunkipilotteja. Kaikessa ohjelmallisessa kehittämisessä aikajana on pitkä ennen kuin tapahtuu jotakin.
  - Tilaratkaisut, case Mediapolis Tampereella, erityyppiset toimijat niin lähellä toisiaan (+ fasilitoitua toimintaa) että syntyy uutta luovia ja kaikkia hyödyttäviä kohtaamisia
  - Case Demola, välittäjäorganisaatio (opiskelijat ja yritykset), jonka tavoitteena kansainvälinen kasvu nostaa konseptin näkyväksi ja tuotteistetuksi
  - Käyttäjä/harrasteyhteisöt, esim. pelialalla, sopivan tason ja yhteisen nimittäjän löytäminen
  - Case biisinkirjoitustyöpaja, mukana tukijat ja kohderyhmät, yhdistetään suomalaista eksotiikkaa ja ammattimaista yhteistyötä

4

3. Millaisia konkreettisia toimenpiteitä tarvitaan monialaisen uutta luovan kasvun mahdollistamiseksi? Kuka, Kenen kanssa ja Mitä? Digitalisaation mahdollistamana? Yli projektipohjaisen tekemisen?

- Korkeakoulutuksen rahoitusmalli; Räjäytetään koulutuksen muurit ja hierarkiat
- Riittävän kevyt ja fasilitoitu "alusta", johon yritykset pääsevät helposti kiinni
- Valmius ottaa riskejä – yrittäjyyden ydin
- Erilaisia rahoitusinstrumentteja löytyy – onko niissä kehitettävää luovan kasvun kannalta
- Matchmaking ja fasilitointi, tuotteistustyöpajat
- Tavoitteellinen toiminta, mitä sitten tehdäänkin

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APPENDIX 3. PARTICIPANTS OF THE STAKEHOLDER WORKSHOP ORGANISED 16.3.2018

Kimmo Aulake, Ministry of Education and Culture (OKM)

Kirsi Kaunisharju, Ministry of Education and Culture (OKM)

Petra Tarjanne, Ministry of Economic Affairs and Employment (TEM)

Laura Liski, Ministry of Economic Affairs and Employment (TEM)

Katri Lehtonen, Ministry of Economic Affairs and Employment (TEM)

Irma Patala, Business Finland

Sanna Piiroinen, Business Finland

Lasse Paananen, Business Finland / Ideone

Anu-Katriina Perttunen, Creative Finland

Teija Löytönen, Aalto University

Anna Valtonen, Aalto University

Mia Seppälä, University of the Arts Helsinki

Vesa Kankaanpää, Turku University of Applied Sciences

Katri Halonen, Metropolia University of Applied Sciences

Teemu Santonen, Laurea University of Applied Sciences

Katri Kaalikoski, Humak University of Applied Sciences

Taina Seitsara, City of Helsinki

Petri Sirviö, BusinessOulu

Petteri Kolinen, Design Forum Finland

Jari-Pekka Kaleva, Neogames

Anna Rikkinen, Ornamo

Salla Heinänen, Ornamo

Sanna Rekola, Dance Info Finland

Laura Boxberg, Frame Contemporary Art Finland

Stiina Laakso, Association of Independent Producers in Finland (SATU ry)

Eva-Maria Hakola, Arts Promotion Centre Finland (Taike)

Milla Moilanen, The Promotion Centre for Audiovisual Culture (AVEK)

Kati Uusi-Rauva, Association of Agents and Managers in Creative Industries of Finland (AGMA)

Riku Salomaa, Music Finland

APPENDIX 4. LIST OF INTERVIEWED DOMESTIC STAKE-HOLDERS

Kimmo Aulake, Ministry of Education and Culture (OKM)

Petteri Ikonen, Kymenlaakso University of Applied Sciences (XAMK)

Kirsi Kaunisharju, Ministry of Education and Culture (OKM)

Petteri Kolinen, Design Forum Finland

Harri Manninen, Nordic VR Startups

Milla Moilanen, Promotion Centre for Audiovisual Culture (AVEK)

Harri Paananen, City of Espoo

Lasse Paananen, Ideone Oy

Anu-Katriina Perttunen, Creative Finland

Irma Patala, Business Finland

Raija Partanen, Regional Council of Central Finland

Noora Pinjamaa, Finnmedia

Anu Raappana, Lahti University of Applied Sciences (LAMK)

Teija Raninen, City of Turku

Rita Rauvola, Novia University of Applied Sciences

Sanna Rekola, Dance Info Finland

Merja Salonen, Business Finland

Taina Seitsara, City of Helsinki

Petri Sirviö, BusinessOulu

Tiina Tanninen-Ahonen, Business Finland

Petra Tarjanne, Ministry of Economic Affairs and Employment (TEM)

Tarja Virmala, Finnish Association of Marketing, Technology and Creativity (MTL)

APPENDIX 5. LIST OF INTERVIEWED EXPERTS IN THE BENCHMARK COUNTRIES

Skype interview with Bart Ashmann, Managing Director of CLICKNL, April 19th 2018.

Skype interview with Gerbrand Bas, March 13th 2018.

Skype interview with Jangwoo Lee, Professor at Kyungpook National University. March 20th 2018.

Skype interview with Jungwoo Lee, Associate Research Fellow at Science and Technology Policy Institute (STEPI), March 15th 2018.

Skype interview with Caroline Norbury, CEO and founder of Creative England, March 22nd 2018.

Skype interview with Hasan Bakshi, Executive Director of Creative Economy and Data Analytics at Nesta, May 14th 2018.

Skype interview with Luise Yang, Research and Policy Officer at Creative Industries Fed-eration, May 9th 2018.

Phone interview on May 30th 2018 and email interactions with Adam Killey, Policy Officer at Creative England on various occasions.

GOVERNMENT´S ANALYSIS,
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