

DESIGN FINLAND
PROGRAMME



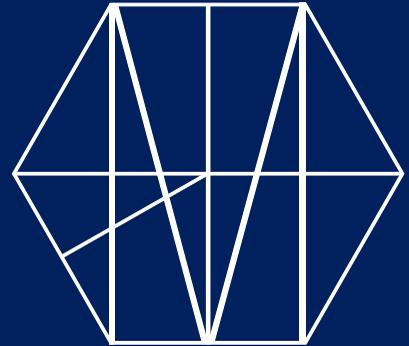
Proposals for Strategy and Actions



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1



DESIGN FINLAND

NEW
GROWTH FROM
DESIGN

STARTING POINTS FOR UPDATING THE NATIONAL DESIGN PROGRAMME

The Finnish economy and society currently face significant pressures for change. Globalisation causes traditional value chains to unravel which in turn pushes industries to structural change. Without investment in productivity enhancing innovations, the outlook for Finnish industry is bleak. At the same time, financial pressures on public economy make it difficult to maintain public services at the current level.

In many countries, design has gained new significance as a tool for responding to these challenges. Consequently, a number of countries have systematically started to invest in design as part of their innovation policy. More than before, design is associated with user-driven innovation activities by companies and with citizen-driven development of society.

Finnish design has long traditions. It is also valued internationally. In recent years, Finland has made significant investments in promoting design. The designation of Helsinki as World Design Capital 2012 led to better understanding of benefits of design in Finland. The year garnered exceptionally wide international attention. However, one cause for concern is whether the promising interest in design issues will wane after 2012. A new and broader understanding of the concept and benefits of design are only slowly becoming rooted into practice.

Enterprises are seeking new perspectives to respond to the economic challenges and

the intensifying international competition. Design provides businesses with opportunities to increase productivity and create value in products and services in both traditional and emerging sectors, such as the gaming industry. Design provides tools for companies to differentiate, thus strengthening their competitiveness.

In the public sector, design can be used to improve the service experience of users while at the same time even reducing the cost of the service, broadening the focus of the public sector service development from merely looking at the efficiency of service production.

The national design programme Design Finland provides a tool for responding to the challenge of renewal. In the programme, design is viewed as a key competence area.

The main objective of the Design Finland programme is to improve the competitiveness of Finland through design competence and its effective utilisation. The programme is based on a broad understanding of competitiveness as a sum of both economic elements and more general factors contributing to well-being. These include the capacity of businesses to survive in intensifying global competition, user friendly public services and a clean living environment and nature.

In the context of the programme, design competence means the capacity to both design and utilise design in business, in the public sector and more widely in society. Design competence is intellectual capital consisting of several different factors. Design

is employed by companies to create value for customers and by the public sector for the purpose of creating value for citizens. It rarely constitutes a single crucial competitive factor, but with other factors and when employed in a new way it can be used to create significant value. Increasingly, design competence is seen as an investment that can be used by companies and the public sector to improve competitiveness. Yet, the level of investment in design competence is not sufficient in Finland.

Design competence will be promoted by enhancing the activities of the design ecosystem. The aim is to strengthen all aspects of the design ecosystem in order for them to speed up one another's growth and lead to a greater competence in design in general.

Previous national level measures to promote design and its utilisation include the Design 2005! multi-annual programme published in 1999. The review of the former design programme was agreed in Prime Minister Jyrki Katainen's Government Programme in spring 2011.

The concept of design competence also covers artistic expertise. Artistic talent and capacity for aesthetic perception are essential requirements for gaining admission to design education.

The design field is vast. In this programme, applied art, studio crafts and design bordering on fine arts and crafts are addressed only as concerns objectives they share with the rest of the design field.

CURRENT STATUS OF DESIGN AND NEW OPPORTUNITIES

The concept of design has expanded from its traditional significance in the realm of product and industrial design to also cover services and other intangibles. The design programme does not aim to offer a complete definition of design. For the purposes of the programme, design is understood as planning and implementation that arises from the needs and values of the user; is comprehensive, accounts for the context of use and adheres to the principle of sustainability. Design can be used to accelerate the development process of new products and services and to develop products and services that meet the needs of customers in a more effective manner. In this broad sense, design has gained a strong foothold in the innovation activities of companies, particularly as concerns user-driven innovation. For more information on various objects of design, see Appendix 1.

High-level design research and education strengthen competences and, consequently, impact the competitiveness of businesses and the nation as a whole. Based on international assessments, design research is of high quality in Finland. Aalto University and the University of Lapland provide university-level design education. The role of polytechnics/universities of applied sciences as providers of education is also significant. Yet, the education does not always meet the needs of labour market.

Several studies have explored the impact of the use of design on business. The findings support the idea of competitive advantage generated by design. With increasing frequency, value is created for intellectual property or intangible factors of production, which also include design. The mechanisms of value creation, the management of value networks and the use and protection of intellectual property rights require new and wide-ranging competence.

In today's Finland, large companies are capable of utilising design in their business activities. However, use of design in small and medium-sized enterprises (SMEs) remains scarce. A Finnish design service company is typically small and is at a low level of networking and internationalisation. These problems were recognised already when the previous design programme was formulated, but the situation has not improved in any essential way. A further challenge is the fragmentary nature of the design field in general. Moreover, the supply and demand of design services do not meet adequately. The resources for the design promotion are scattered.

There is also unused potential in Finland regarding combining capabilities: expertise in design can be combined to other strengths, such as expertise in energy, environment and bio economy. For instance, the games industry has successfully combined various types of expertise, including design. More multidisciplinary research on opportunities to use design is needed.

Major societal challenges such as the ageing necessitate a renewal of the public sector. The demand for public services, health services in particular, will see a strong increase in the future, even though the funding is under pressure to be reduced. At the same time, a more personalized approach is expected of the services. So far, the use of design competence in the public sector has been very limited in Finland. Examples of successful projects already exist, however they remain on a small scale or are isolated, and the obtained results have not been adopted into broader use in the organisations or disseminated externally on a significant scale.

Beside growing societal challenges, other important changes have also taken place in the operating environment since the launch of the previous design programme. Urbanisation accelerates, societies are increasingly service oriented and digitalised. Seizing new business opportunities require stronger and increasingly diverse design competence and its utilisation. Development targets include ICT competence related to design and better utilisation of user-driven methods in innovation activities. Examples of the latter include the development of user interfaces and greater inclusion of users in the renewal of public services.

DESIGN FINLAND PROGRAMME

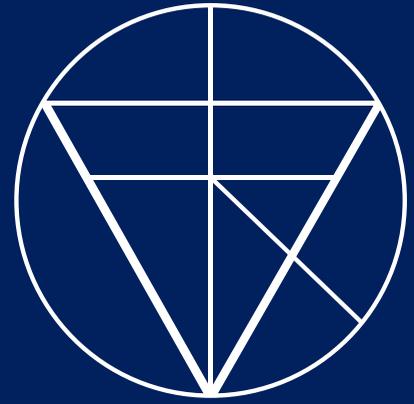
The vision and strategy of the programme will be implemented through 29 actions. The target year for the Design Finland vision is 2020. Meanwhile, possible changes in the operating environment will be responded to by

continuously assessing the strategic objectives and actions of the programme. The realisation of the strategic objectives of the programme requires that sufficient resources are arranged for the implementation and monitoring of the programme. An interim review of the programme will be carried out in 2016, half-way through the programme period.

Design Finland programme was prepared in 2012 under the direction of the Ministry of Employment and the Economy in co-operation with the Ministry of Education and Culture. The preparation work was a joint effort between representatives of the private and the public sector, organisations representing the design field, universities and polytechnics, the Finnish Innovation Fund Sitra and ministries. Representatives of Centres for Economic Development, Transport and the Environment, the Finnish Funding Agency for Technology and Innovation (Tekes) and the National Council for Design acted as partners of expertise.

The programme was prepared through broad-based and open co-operation, described in greater detail in Appendix 2. The background work for the preparation of the programme was carried out by design agency Creadesign Ltd.

2



VISION FOR 2020
AND THE DESIGN
ECOSYSTEM

VISION:

IN 2020, DESIGN HAS ENABLED THE GROWTH OF WELL-BEING IN A WORLD OF UNCERTAINTY. DESIGN HAS BECOME A CORE COMPETENCE BOTH IN PRIVATE AND THE PUBLIC SECTOR.

In the vision for the design programme, the benefits of design for Finland are associated with design competence and its broad-based utilisation in society. Finnish companies are facing an intensifying global competition while the capacity of the public sector to maintain its current level of services is weakening.

Nevertheless, by 2020, world-class design competence has improved the competitiveness of Finland and the well-being of its citizens. Design competence is utilised widely in business life and the public sector. Both businesses and the public sector perceive design as a profitable investment. Finland has attained international success as a provider of sustainable and high-quality products and services. New success stories highlight the benefits of an experiential approach, responsibility and a regard for the environment in business. Similarly to architecture and the arts, high-level design improves the aesthetic quality of our environment.

A well-functioning design ecosystem plays a crucial role in the implementation of the programme vision. The term refers to a complex system where factors affecting the utilisation of design – education, research,

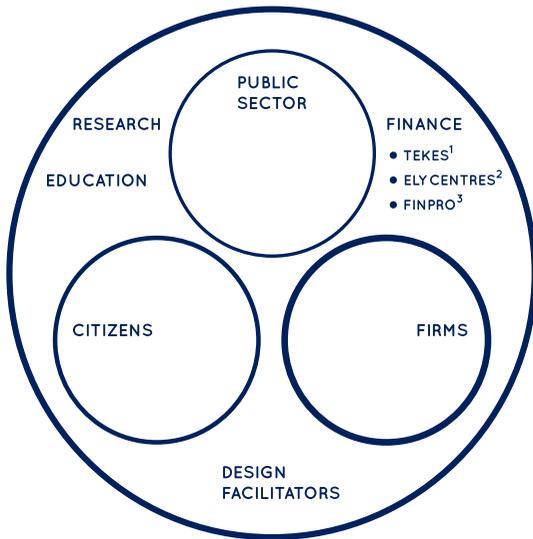
design promotion organisations, companies offering design services, public sector incentives and demand for design from businesses and the public sector – operate in close interaction and strengthen one another. Also business incubators, accelerators and local innovation clusters are part of the nationwide design ecosystem. In a functional design ecosystem, the supply and demand for design competence are in balance.

IN A DYNAMIC AND VITAL DESIGN ECOSYSTEM

- high-level design education and research promote competence,
- design education corresponds to the changing needs of the labour market,
- active interaction between different academic disciplines and knowledge transfer to companies facilitate the utilisation of results of design research,
- companies increase the use of high-quality design expertise in innovation activities, which promotes growth and increases business and opportunities for internationalisation for design service companies,
- the country brand is strengthened, which attracts high-level international professionals and foreign investment to Finland.

The current Finnish design ecosystem is not fully efficient. (See Figure 1, page 20) The resources for the design promotion are scattered and no common strategic objectives are shared.

The ecosystem is promoted by strengthening the different actors of the ecosystem and by



PICTURE 1
CURRENT
DESIGN ECOSYSTEM

¹ TEKES; THE FINNISH FUNDING AGENCY FOR TECHNOLOGY AND INNOVATION

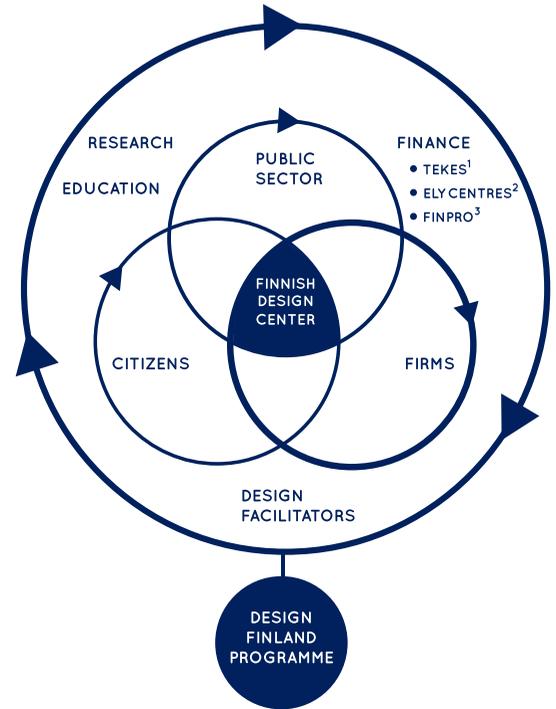
² ELY CENTRES; CENTRES FOR ECONOMIC DEVELOPMENT, TRANSPORT AND THE ENVIRONMENT

³ FINPRO; THE NATIONAL TRADE, INTERNATIONALISATION AND INVESTMENT DEVELOPMENT ORGANISATION

adopting the Finnish Design Centre network. Network aims to enhance interaction between the different actors of the ecosystem (see Figure 2).

THE VISION FOR THE DESIGN PROGRAMME WILL BE IMPLEMENTED THROUGH FOUR STRATEGIC OBJECTIVES:

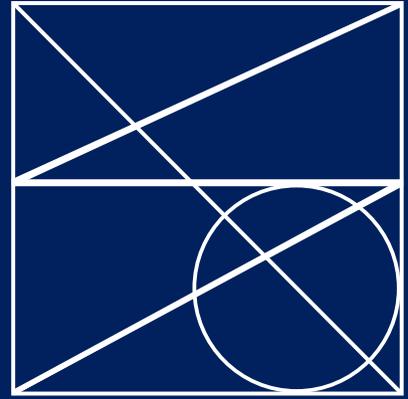
1. Understanding of design and participatory civil society are at a solid level. Competence, research and education are at a



PICTURE 2
DYNAMIC
DESIGN ECOSYSTEM

- high level internationally and contribute to well-being and the competitiveness.
2. Multidisciplinary design competence has strengthened competitiveness.
3. Design is effectively utilised in important growth sectors.
4. In the public sector, design is used in the development of society and as a tool to promote well-being.

3



STRATEGIC
OBJECTIVES
OF THE DESIGN
PROGRAMME

STRATEGIC OBJECTIVE:

3.1. Understanding of design and participatory civil society are at a solid level. Competence, research and education are at a high level internationally and contribute to well-being and the competitiveness.

The first strategic objective aims to strengthen the foundation for design competence through the primary means of education and research. Design research and education are developed in strategic and multidisciplinary co-operation with high-level educational institutions and research institutes in Finland and abroad. Design education is integrated into early childhood education and all levels of schooling, which will increase critical design understanding and competence. In the future, citizens, individuals in different professions and those seeking admission to design education in polytechnics and universities will possess significantly more diverse basic skills in design and its utilisation than today.

Moreover, the teaching for design professionals provided in higher education institutions is concentrated in strong units with the best resources to offer high-level teaching. The share of business studies will be increased in designer education to promote students'

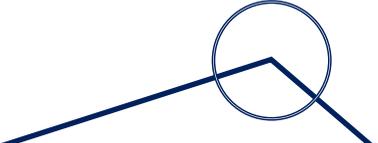
capabilities for entrepreneurship. Due to increasingly complex challenges, the multidisciplinary dimension of design education is expanded further: broader choice of minor subjects is promoted, and selecting design as a minor subject in other curricula is facilitated. Multidisciplinary and a user-driven approach are promoted in design education through the adoption of new methods that strengthen open innovation activities and the role of users in research, development and innovation activities.

The post-graduation employment of international design students in Finland is supported, and student exchange and practical training of Finnish students abroad are increased. The design competence of public sector organisations is improved through a special education programme focusing on the design methods and their application in a user-driven reform of public services. Multidisciplinary design is enhanced in terms of both intangibles and important growth areas such as the green economy.

ACTIONS:

1. CITIZENS' UNDERSTANDING OF DESIGN IS PROMOTED BY INCREASING DESIGN LITERACY THROUGH EARLY CHILDHOOD EDUCATION, ORGANISATIONAL ACTIVITIES AND COMMUNICATION. (FINNISH NATIONAL BOARD OF EDUCATION, DESIGN ORGANISATIONS, MUSEUMS)

An understanding of design begins in early education and continues as lifelong learning. As a result, design competence in society grows and has a positive impact on well-being and competitiveness. Individuals' understanding of design is accumulated starting from early childhood education. The design literacy is enhanced by encouraging individuals to do things themselves and learning by doing. The collections, expertise and international interaction of museums, in particular the Design Museum, are utilised in a more diverse manner, and co-operation between the museum institutions is strengthened. Associations play a central role in promoting lifelong design education among citizens.



Designer's Treasure Chest project provided groups in early childhood education an introduction into the world of design. The target group consisted of a total of 11,000 children in Helsinki, Espoo, Vantaa, Lahti and Kauniainen. The treasure chests contained tools for design education and functioned as a means of support for teaching children new skills in problem solving as well as empathy and capabilities to observe their environment and everyday objects from the design viewpoint. The designer's treasure chests remain in the use of early childhood education. The project was included in the World Design Capital Helsinki 2012 programme.

For more information:
www.muotoilijanaarreakku.fi

2.
DESIGN EDUCATION IS PROMOTED IN BASIC EDUCATION AND UPPER SECONDARY EDUCATION. (FINNISH NATIONAL BOARD OF EDUCATION, EDUCATIONAL INSTITUTIONS)

The share of design education is strengthened in the national core curricula in basic education, general upper secondary education and basic education in the arts. Besides being taught under arts and crafts, design education can also be incorporated into other thematic entities of the curriculum, such as communication and media skills, environmental education and the use of technology. In the context of basic education, the objective of design education is to develop the design literacy of children and young people. The learning by doing principle is a central method in teaching. Results from the experiment on a general upper secondary school specialising in design are utilised widely in general upper secondary education. The strengthening of design competence is supported through further education and training.

3.
INTERNATIONAL CO-OPERATION IS INTENSIFIED, AND EXCHANGE WITH LEADING INTERNATIONAL EDUCATIONAL INSTITUTIONS AND RESEARCH INSTITUTES IN THE DESIGN FIELD IS SUPPORTED. (MINISTRY OF EDUCATION AND CULTURE, ACADEMY OF FINLAND, TEKES, UNIVERSITIES, POLYTECHNICS, ORGANISATION

FOR INTERNATIONAL MOBILITY AND COOPERATION; CIMO)

Higher education for design professionals is strengthened by concentrating the education to strong units with sufficient resources for long-term development of operations and internationalisation. High-level design education requires strategic co-operation with the world's most advanced educational institutions and research institutes— joint research and education projects, teacher and researcher mobility to pre-determined targets (in the manner of the FiDiPro programme) and broad-based student exchange.

4.
BUSINESS COMPETENCE AMONG DESIGNERS IS DEEPENED AND PRACTICAL TRAINING IS PROMOTED. POSSIBLE NEEDS FOR ADDITIONAL FUNDING FOR PRACTICAL TRAINING AND EMPLOYMENT OF FOREIGN DESIGN STUDENTS ARE ASSESSED. (MINISTRY OF EDUCATION AND CULTURE, FINNISH NATIONAL BOARD OF EDUCATION, THE ACADEMY OF FINLAND, ORGANISATION FOR INTERNATIONAL MOBILITY AND COOPERATION, CIMO)

Competence in business and entrepreneurship are highlighted in the education of design professionals, as they encourage the establishment of new design companies and the promote employment of designers. Practical training for design students and recently graduated designers are enhanced in compa-

nies and the public sector both in Finland and abroad. Particular attention is paid to practical training and employment opportunities for foreign students.

5.
A PROGRAMME FOR PROMOTING DESIGN COMPETENCE IN THE PUBLIC SECTOR IS ESTABLISHED. (SITRA, MUNICIPALITIES, HIGHER EDUCATION INSTITUTIONS)

Currently, the public sector lacks design competence and the ability to utilise design. Moreover, design competence specialising in the logic of the public sector is scantily available. To strengthen design competence in the public sector, a special educational programme is established with the aim of promoting the methods of design in the user-driven renewal of public services. The programme is aimed to promote a better understanding of the operating methods and special requirements of the public sector within design education provided by higher education institutions.

6.
THE MEASURES REQUIRED INCREASING THE SHARE OF DESIGN EDUCATION IN DEGREES OBTAINED IN OTHER FIELDS AND THE ADDITIONAL COSTS INCURRED BY THESE MEASURES ARE DETERMINED. THE PROVISION OF CONTINUING EDUCATION FOR DESIGN PROFESSIONALS IS INCREASED. (MINISTRY OF EDUCATION AND

CULTURE, HIGHER EDUCATION INSTITUTIONS, INITIAL AND FURTHER EDUCATION AND TRAINING)

The teaching of design in other degree programmes and further education is expanded by improving the opportunities to choose design as a minor and/or optional subject. Designers are encouraged to participate in continuing education to update and expand their expertise. The greater incorporation of design education into other degree programmes is supported through the provision of continuing education for teachers and pedagogical continuing education for design professionals. The provision of continuing education for design professionals and entrepreneurs is increased particularly as concerns intangibles.

7.
NEW USER-DRIVEN METHODS ARE INTRODUCED IN DESIGN EDUCATION TO PROMOTE OPEN INNOVATION ACTIVITIES. (HIGHER EDUCATION INSTITUTIONS, FINNISH NATIONAL BOARD OF EDUCATION)

The development of information and communication technology offers new methods not only for observing the activities and needs of users but also for improving the accessibility of services and enhancing the participation of citizens. To develop the opportunities for citizen participation, new methods, such as co-design, crowd sourcing, mass on-line open courses and the utilisation of different test environments (such as Living Labs) in innovation

activities, can be taught and used already in design education. Open design is an example of an emerging operating method enabling the development of physical products, machines, services and systems using publically distributed, open design information.

8.
DESIGN RESEARCH AND THE APPLICATION OF RESEARCH RESULTS ARE STRENGTHENED IN IMPORTANT GROWTH SECTORS. (HIGHER EDUCATION INSTITUTIONS, ACADEMY OF FINLAND, TEKES, THE TECHNICAL RESEARCH CENTRE OF FINLAND; VTT)

The use of design as competitive advantage in growth sectors creating solutions to societal challenges also requires new openings in design research. These include the design of digital contents and the green economy, intelligent and human-centric environments and well-being services. The application of new materials and material and manufacturing techniques, such as 3D printing, demands experimental research. The design research in growth sectors usually requires the combining of various perspectives and the forming of large, multidisciplinary research groups. Design research may, for instance, produce new tools for more effective utilisation of information and communication technology. By combining new and increasingly versatile design to information technology, it is possible to improve user interfaces, to increase user-driven innovation activities or to visualise data to make it more understandable.

9.

EU'S RESEARCH AND INNOVATION PROGRAMMES ARE USED TO OBTAIN FUNDING FOR RESEARCH AND TO DISSEMINATE RESULTS. A SPECIFIC GOAL IS TO ESTABLISH A DESIGN KNOWLEDGE AND INNOVATION COMMUNITY UNDER THE EUROPEAN INSTITUTE OF INNOVATION AND TECHNOLOGY (EIT). (HIGHER EDUCATION INSTITUTIONS, ACADEMY OF FINLAND, TEKES, MINISTRY OF EDUCATION AND CULTURE, MINISTRY OF EMPLOYMENT AND THE ECONOMY)

Through its internationally advanced research on design, Finland is an active partner in research co-operation in the EU's research and innovation programmes. A specific goal is to establish a Knowledge and Innovation Community (KIC) focusing on design and its utilisation with the aim to generate new innovations and new operating models for innovation activities.

Knowledge and Innovation Communities (KICs) are innovation partnerships for co-operation between higher education institutions, research organisations, businesses and other parties. They act as a strategic network responding to challenges posed for EIT. EIT is responsible for the selection of Knowledge and Innovation Communities.

STRATEGIC OBJECTIVE:

3.2. Multidisciplinary design competence has strengthened competitiveness

The second strategic objective of the design programme promotes design ecosystem dynamics to balance the demand and supply of design competence. For an efficient design ecosystem it is crucial that different actors are strong and the interaction between them is successful. For this reason, the introduction of the Finnish Design Centre network is proposed for improving the dynamics, effectiveness and impact of the ecosystem. The network aims also to ensure that development work performed during World Design Capital year will continue. A further target is to promote international interest towards Finnish design and communicate about it in a more efficient and more visible manner. The Finnish Design Centre would not constitute a new organisation, but a new way of bringing together currently fragmented resources.

Investments in design are associated with positive economic externalities: when a company invests in design new knowledge and competence is also disseminated to other companies. The public sector should thus promote the broad-based utilisation of design by companies. The most important instruments are the financial incentives that encourage companies to employ design competence in

their innovation activities. These can generate new competitive advantages.

In particular, the aim is to increase the competence of SMEs and to promote their ability to recognise the strategic significance of design and utilise design in research, development and innovation activities. For instance, it is possible to employ the methods of design to take more effectively into account the needs of users when developing concepts combining physical equipment, digital content and services. The financial incentives also support companies' efforts towards growth and internationalisation. Design programme also targets to attract international high-level experts.

The Ministry of Employment and the Economy, Tekes, the Centres for Economic Development, Transport and the Environment and Finpro promote the use of design through programme funding, grants and business services. The Ministry of Education and Culture and the Arts Promotion Centre Finland together with its regional offices promote design and the working conditions of designers through aid, grants, and the work of regional artists and programme funding.

Research, development and innovation activities and the use of intellectual property rights in companies are promoted through the introduction new tax incentives. The incentives are also intended to encourage cities to invest in their areas of expertise, such as design. The EU Structural Funds can offer broad support for development projects based on design and the utilisation of design.

3.2.1

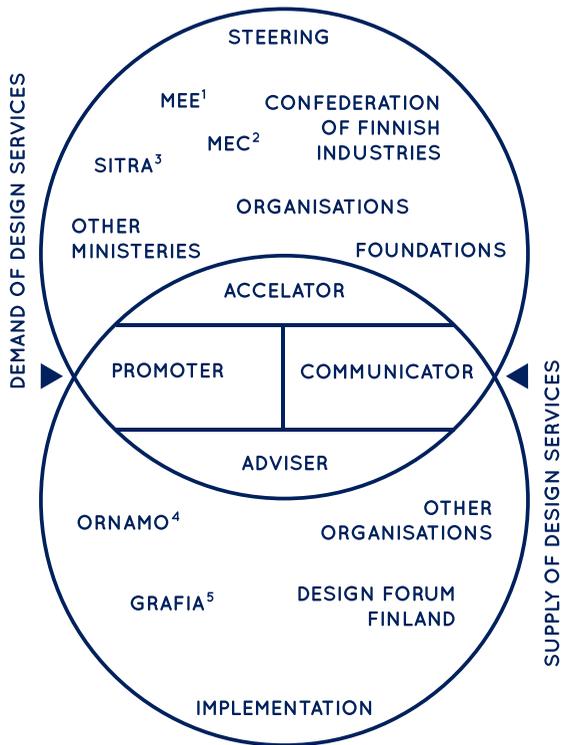
FINNISH DESIGN CENTRE NETWORK

10.

THE FINNISH DESIGN CENTRE NETWORK IS INTRODUCED TO PROMOTE THE FUNCTIONING OF THE DESIGN ECOSYSTEM. (MINISTRY OF EMPLOYMENT AND THE ECONOMY, MINISTRY OF EDUCATION AND CULTURE, BUSINESS AND DESIGN ORGANIZATIONS)

The Finnish Design Centre network is adopted to strengthen the dynamics of the ecosystem. It is used to strengthen design competence and its utilisation and to promote awareness of Finnish design in Finland and abroad. Currently fragmented public resources are gathered together by increasing co-operation between financiers. To enable this, the division of labour and defining of objectives between design organisations must be adjusted to better support co-operation.

The network consists of two parts – steering and implementation. The Ministry of Employment and the Economy and the Ministry of Education and Culture steer the network through funding. In this task, the ministries are supported by the expertise of stakeholders. Promoters of design receiving public funding, particularly Design Forum Finland, Ornamo association and Grafia association, hold the main responsibility for the implementation. The intention is to also invite other organisations to take part in the work.



¹ MEE; MINISTRY OF EMPLOYMENT AND THE ECONOMY
² MEC; MINISTRY OF EDUCATION AND CULTURE
³ SITRA; THE FINNISH INNOVATION FUND
⁴ ORNAMO; THE FINNISH ASSOCIATION OF DESIGNERS
⁵ GRAFIA; ASSOCIATION OF VISUAL COMMUNICATION

PICTURE 3
FINNISH DESIGN CENTRE NETWORK

ACTIVITIES TO TAKE PLACE THROUGH THE FINNISH DESIGN CENTRE NETWORK INCLUDE:

- coordination and implementation of both national and international promotional activities,
- development of new means to enable better meeting of the needs for design competence in SMEs and the supply of design services,
- promoting the application of the most recent research results in companies and developing contacts to strategic growth sectors,
- providing advice on how to utilise design competence, on benefits available through design and on funding opportunities,
- promoting the use of design in the public sector,
- and preparing a joint communication plan.

3.2.2 INCENTIVES TO IMPROVE THE FUNCTIONALITY OF THE ECOSYSTEM

ACTIONS:

11. THE ADVISORY AND DEVELOPMENT SERVICES PROVIDED BY CENTRES FOR ECONOMIC DEVELOPMENT, TRANSPORT AND THE ENVIRONMENT TO COMPANIES ARE RENEWED, IN ORDER TO BETTER ACCOUNT FOR DESIGN AS A FACTOR IN THE BUSINESS DEVELOPMENT OF SMES.

(MINISTRY OF EMPLOYMENT AND THE ECONOMY, CENTRES FOR ECONOMIC DEVELOPMENT, TRANSPORT AND THE ENVIRONMENT)

A renewal of development services provided to SMEs is under way. The new services are tailored to better meet the needs of entrepreneurs and they will be adopted in 2014. The services aim at increasing the competence of entrepreneurs and promoting the growth and internationalisation of the business. The competence development services for SMEs are part of a European Social Fund national development programme for 2014–2020.

12.
TEKES' INNOVATION FUNDING IS USED TO ENHANCE THE DEVELOPMENT AND UTILISATION OF DESIGN EXPERTISE AS A



SOURCE OF COMPETITIVENESS AND GROWTH FOR COMPANIES. (TEKES, MINISTRY OF EMPLOYMENT AND THE ECONOMY)

The strategy of Tekes relies strongly on intellectual property as a source of competitive advantage. Innovation funding through diverse project and programme activities encourages companies, among other things, to find experimental, user-driven solutions. Design is a core element of a company's intangible factors of production, and it is accounted for in the Tekes programmes as an important factor of intangible competence.

13.
COMPANIES UTILISING DESIGN ARE ENCOURAGED TO MAKE USE OF FUNDING INSTRUMENTS AND BUSINESS SERVICES INTENDED TO PROMOTE EXPORT AND INTERNATIONALISATION. MINISTRIES AND THEIR AGENCIES ENSURE THAT THESE SERVICES MEET THE NEEDS OF COMPANIES. (MINISTRY OF EMPLOYMENT AND THE ECONOMY, FINPRO, MINISTRY OF EDUCATION AND CULTURE, MINISTRY OF FOREIGN AFFAIRS)

The use of design as a competitive factor in export products and services is increased. The services of export promotion agencies and the Team Finland network are employed to promote the export of design and design-intensive products and services. Measures are undertaken to develop cultural export

and to promote marketing competence in the creative sector.

14.

ADVISORY SERVICES IS USED TO ENSURE THAT INFORMATION ON THE USE OF THE TAX INCENTIVE FOR RESEARCH AND DEVELOPMENT ACTIVITIES REACHES SMES. (MINISTRY OF FINANCE, MINISTRY OF EMPLOYMENT AND THE ECONOMY)

The two-year tax incentive adopted at the start of 2013 and aimed at SMEs compensates companies for the wage costs of staff employed for research and development work in the amount of corporate tax. The incentive was designed to cover a number of different competences, including design when it constitutes a part of the research and development activities of companies. It is necessary to make sure that information on the new incentive reaches SMEs as broadly as possible.

15.

A TAX INCENTIVE FOR INTELLECTUAL PROPERTY RIGHTS IS ADOPTED. (MINISTRY OF FINANCE, MINISTRY OF EMPLOYMENT AND THE ECONOMY)

The Ministry of Employment and the Economy has carried out assessment for the adoption of a tax incentive for intellectual property rights. The incentive would consist of a tax relief for companies on licensing income from intellectual property rights. According to a proposal by the Ministry of Employment and the Economy, the tax incentive would

also be directed to intellectual property rights relevant from the viewpoint of design such as utility models and copyright of design. The government will address the issue in spring 2013.

16.

COMPETENCE REGARDING THE USE AND PROTECTION OF INTELLECTUAL PROPERTY RIGHTS ASSOCIATED WITH DESIGN IS IMPROVED PARTICULARLY IN SMES. (CENTRES FOR ECONOMIC DEVELOPMENT, TRANSPORT AND THE ENVIRONMENT)



In the realm of design, immaterial property is protected through such instruments as protection of designs, utility models, trademarks and patents. Competence in protection of intangibles and value creation is improved through education, training and communications as part of the National Strategy for Intellectual Property Rights, which is currently being updated.

17.
MULTIPROFESSIONAL CLUSTERS OF DESIGN COMPETENCE ARE STRENGTHENED. THE INKA PROGRAMME, FOR EXAMPLE, PROVIDES CITIES WITH AN EXCELLENT OPPORTUNITY TO USE DESIGN TO PROMOTE COMPETITIVENESS. (MINISTRY OF EMPLOYMENT AND THE ECONOMY, TEKES)

Finland currently has three significant clusters of design competence: Helsinki, Lahti and Rovaniemi. The clusters attract high quality expertise in design, which lowers the threshold for companies to utilise design. The clusters are strengthened through investments in education and training and the channelling of public funding.

The Innovative Cities (INKA) programme aiming at the formation of internationally attractive clusters of innovation will be launched at the start of 2014. The programme encourages Finland's largest city regions to choose their strategic focus areas on the basis of originality, demand and multidisciplinary expertise and to generate knowledge-driven

business. The programme is co-funded by the EU Structural Funds.

18.
THE FUNCTIONALITY OF THE ECOSYSTEM IS IMPROVED AND DESIGN COMPETENCE AND THE UTILISATION OF DESIGN ARE PROMOTED IN A DEVELOPMENT PROGRAMME BY THE EU STRUCTURAL FUNDS. (MINISTRY OF EMPLOYMENT AND THE ECONOMY, CENTRES FOR ECONOMIC DEVELOPMENT, TRANSPORT AND THE ENVIRONMENT)

New Structural Fund programmes will be implemented between 2014 and 2020. The utilisation of design is supported by the national European Regional Development Fund development programme and by regional development programmes. The development of competence can be funded through the European Social Fund.

STRATEGIC OBJECTIVE:

3.3.

Design is utilised effectively in important growth sectors

During periods of slow economic growth, societies share the same problem: how to generate new wealth. It is thus not surprising that almost all nations invest in obvious growth sectors associated with emerging societal challenges, such as the environment, energy, bioeconomy and health. Simultaneously to developing solutions to these challenges at home, the aim is to lay foundation for international business.

Under these circumstances, a small country must be able to come up with independent decisions in order to form a credible foundation for the growth of international business. For Finland, a significant opportunity for differentiation lies in the capacity for open-minded combination of the areas of strength and expertise. New sources of competitive advantage can be found specifically at the interfaces of various areas of expertise.

Solutions merging expertise from different fields can be very difficult to copy. New areas of application should thus be located for design, too, in order to generate the afore-mentioned new advantages. The most effective way to achieve this is to create links between the design programme and currently active or soon-to-be-launched political initiatives or projects. The design programme identifies current or potential competence

areas that might gain a competitive advantage from the use of design. These areas include the green economy, health, digitalisation and opportunities and challenges related to the arctic location of Finland.

Environmental protection, the scarcity of material resources, the availability of energy and climate change all form multifaceted challenges that are being tackled by societies worldwide. One solution offered for the challenges - green economy - contains immense potential for new types of business, whereas bioeconomy highlights the use of biomasses as part of the efficiency and recycling of material resources. Finland has solid, technology-based expertise in these areas. The crucial aspect is how to differentiate ourselves from other nations.

Design has always exploited opportunities provided by new materials and material technologies. Materials research has a firm foundation in Finland, and the use of traditional industrial materials is expanding into new sectors. Combining materials and the use of new and cost-effective materials, material technologies and new production methods, such as local manufacturing, generates opportunities for producing entirely new moulds, prototypes and end products. Moreover, the new materials offer a wide range of opportunities for designing intelligent products.

Global warming opens up new opportunities for the utilisation of arctic natural resources as well as the growth of other types of business related to the arctic region. The combining of design to the more traditional areas of arctic

expertise can generate a particular advantage for Finland. With the help of design, we can improve the functionality and usability of products and services developed for extreme conditions.

ACTIONS:

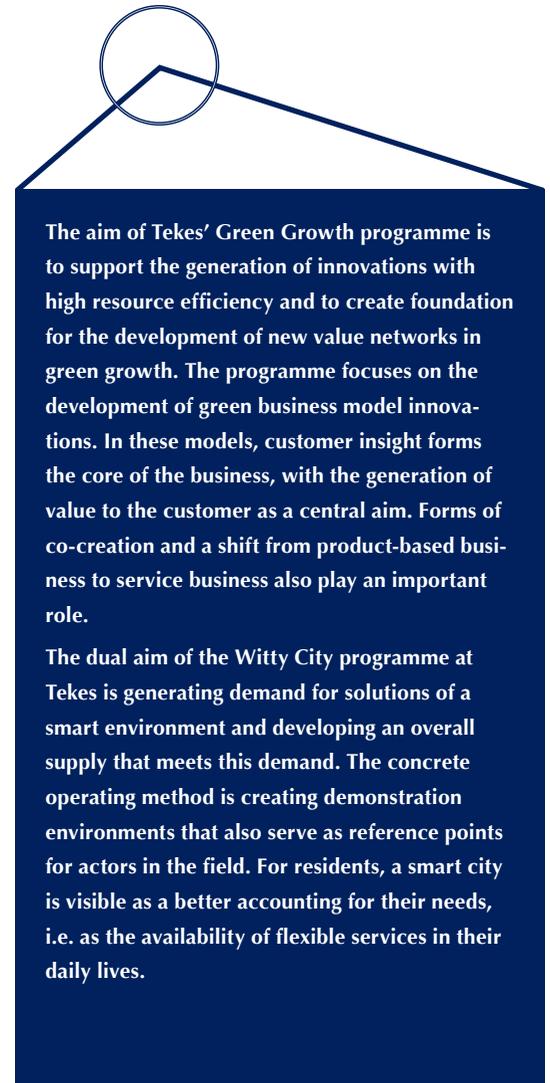
19.

DESIGN COMPETENCE IS INTEGRATED IN THE CLEANTECH PROGRAMME AND DEVELOPMENT PROJECTS FOR NEW BUSINESS IN THE GREEN ECONOMY. (MINISTRY OF EMPLOYMENT AND THE ECONOMY, TEKES)

The business opportunities of the green economy will be promoted particularly through various intelligent city ecosystems (smart cities), demonstrations and pilots. Design competence brings an opportunity to generate user-centred and, in contexts such as urban planning, genuinely interoperable wholes. They account for the environment, construction, maintenance, mobility and the development of services. Design promotes a new generation of the solutions that solve the problems in the daily lives of end users – citizens – through more user-driven approach.

The Ministry of Employment and the Economy has launched a strategic Cleantech programme aiming to encourage Finnish companies on the path of sustainable growth and regeneration through means provided by clean technology. Design competence will be utilised in the programme, particularly

in the Espoo and Oulu pilot projects on city ecosystems. Focus areas in the pilots include the service development associated with the utilisation of open data, energy efficiency and the optimisation of material streams. Further objectives include the monitoring of the city



environment, construction and housing as well as better interaction with residents. The structures are meant to consume as little of the earth's resources as possible.

A new kind of expertise is required to seize the business opportunities of the green economy. Linking design competence together with green economy demands the pooling of investments in expertise. This has been achieved for example with the CleanDesign concept in Lahti.

20.
DESIGN IS INTEGRATED IN THE NATIONAL STRATEGY FOR BIOECONOMY, AND DESIGN COMPETENCE IS ENHANCED THROUGH THE NATIONAL PROGRAMME FOR WOOD CONSTRUCTION. (MINISTRY OF EMPLOYMENT AND THE ECONOMY, TEKES, AALTO UNIVERSITY, CITY OF ESPOO)

For both companies and policy makers, the scarcity of material resources is among the pressing issues to be solved in the next few decades. This signifies a huge demand for bio-based materials and effective reuse of resources. The term ecodesign refers to taking into account the ecological footprint to be generated during the lifespan of a product already at the designing stage. A shift in values among consumers is already placing greater emphasis on sustainable use of materials in value creation. For companies, the utilisation of design competence when solving challenges related to the scarcity of resources may

signify a more sustainable and economical management of material investments.

The significance of wood and fibres as manufacturing materials of products, in construction and as end products is increasing. Design can be used to raise the amount of value added in wood products and thus strengthen the competitiveness of companies. The objective of the National Programme for Wood Construction is to increase significantly



the use of wood construction and wood product solutions in Finland and to promote their export. Combining high-level architecture and design to environmentally-conscious and energy-efficient construction is one of the focus areas of the programme.

21. ARCTIC DESIGN IS INTEGRATED IN FINLAND'S ARCTIC STRATEGY, AND THE PRECONDITIONS FOR FORMING CLUSTER FOR EXPERTISE IN ARCTIC DESIGN IN CONNECTION WITH THE CITY OF ROVANIEMI AND THE UNIVERSITY OF LAPLAND ARE STRENGTHENED. (MINISTRY OF FOREIGN AFFAIRS, MINISTRY OF EMPLOYMENT AND THE ECONOMY, CITY OF ROVANIEMI)

Finland's Strategy for the Arctic Region defines the goals and measures to be adopted in order to grasp the new opportunities related to its arctic location. Through combining design to the traditional arctic strengths, it is possible to create genuinely new competitive advantages. This can benefit both companies in the arctic region and, more broadly, businesses offering arctic expertise. The public sector, too, can benefit from arctic design for example in urban planning.

The aim is to strengthen the cluster of arctic design through the pooling of regional resources, a good example of which is the establishment and activities of a design committee within the Lapland Chamber of Commerce. The aim is to bring together com-

panies, supply of design services and design research in the region.

22. OPPORTUNITIES OFFERED BY DESIGN IN AREAS SUCH AS THE DEVELOPMENT OF USER INTERFACES ARE HIGHLIGHTED IN TEKES PROGRAMMES AND THE ACTIVITIES PUT FORWARD BY THE FINNISH ICT CLUSTER 2015. (MINISTRY OF EMPLOYMENT AND THE ECONOMY)

The development of information and communication technologies (ICTs) brings an element of intelligence to equipment, objects, and environment. The internet is everywhere. Our daily chores, such as shopping, generate a huge amount of data transfer, usually without us realising that anything has taken place. More and more, different equipment are communicating wirelessly and taking care of matters on our behalf. In the rapidly developing ubiquitous information society, the user is connected to equipment and environments carrying out different tasks mainly through various user interfaces. In a ubiquitous information society, the design of functional user interfaces can be crucial for the success of many products and services.

Expertise in design is needed also in the analysis of large masses of data (big data). The significance of design has been highlighted for instance in data visualisation. In such an environment, design competence together with effective use of information technology may constitute an important resource for

Finland, particularly as the traditional ICT sector goes through a structural change.

A strategy for mitigating the structural changes in the ICT sector, implementing a renewal of the sector and increasing competitiveness, prepared under the direction of the Ministry of Employment and the Economy was completed in January 2013.¹ When implementing the actions proposed in the strategy, it is necessary to seize the opportunities of design in the development of competitive ICT-based products, services and environments and expertise related to them. The use of design provides support for the uptake of new material technologies and manufacturing methods, the designing and implementation of different user interfaces and the visualisation of various phenomena.

In order to yield real benefits, strong technological expertise and applications also require the testing and assessment of usability. In the design of services, particularly digital services, the methods used in design, such as co-design and co-creation, provide a methodological foundation for adoption of new, user-driven applications. Design competence also helps to perceive new areas of application for developing technologies.

STRATEGIC OBJECTIVE:

3.4. In the public sector, design is used in the development of society and as a tool to promote well-being.

The design programme's fourth strategic goal is to promote design competence and its utilisation in the public sector. Even though the Finnish public sector has been subject to major reforms, so far its utilisation of design competence has been very low.

For the public sector, design offers a tool for regeneration as concerns both at the strategic level and the user-driven development of services. As a way of thinking, strategic design can be used to develop solutions for great societal challenges while avoiding strict sectoral divisions typical of the public sector. Strategic design refers to the application of familiar design principles when seeking solutions for such major social challenges as the ageing population or climate change. Design can be used to find new solutions, to identify possible measures to be taken and to generate functional overall solutions. A good example of strategic design is Sitra's Helsinki Design Lab initiative which demonstrated strategic design in practice.

Design can also be used to facilitate the establishing of user-driven service strategies and service paths. Public services are produced and their production is rendered

more effective particularly through the use of information and communication technology. Thus, ICT expertise and design competence combined occupy a central role in improving the user experience of public services.

Citizens' expectations towards the quality public services have increased simultaneously with the reduction in resources. At the same time, the services are expected to be more user-centred. With the help of service design, and particularly user interface design, it is possible to improve public services and generate cuts in costs. The Design programme also aims to promote the market dialogue between public organisations and design agencies to create the right conditions for the successful procurement of user-driven design services. Moreover, design is used as a tool in the ongoing work to promote productivity and overall efficiency in municipalities.

The intention is to generate design competence and ability to utilise design also in the public sector. To achieve this end, design competence for the public sector challenges is enhanced through a special programme (Action 5). A further aim is to assess how the use of design in the public sector could be promoted more extensively. Best practise on successful service design projects is disseminated more widely. Developers of the public sector are also encouraged to involve citizens in their work through the adoption of new, participatory methods and to organise competitions aimed at seeking genuinely new solutions openly and without preconceptions. In addition, well-designed and user-centred public services constitute a factor for interna-

tional attractiveness, which also strengthens national competitiveness and the country brand of Finland.

Until now, the number of incentives and operating models available for the public sector to promote design has been low. Now, however, design can be promoted through Tekes programmes and EU's Structural Funds. The Finnish Design Centre network promotes design and its utilisation also in the context of the public sector.

ACTIONS:

23.

THE USE OF STRATEGIC DESIGN IS ENCOURAGED WHEN SEEKING SOLUTIONS FOR MAJOR SOCIETAL CHALLENGES. (MINISTRIES, MUNICIPALITIES)

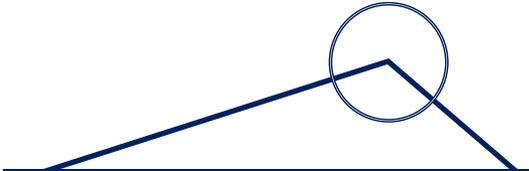
The public sector can improve the effectiveness of decisions and structures and generate well-being by exploiting the strategic dimension of design. In particular, strategic design facilitates the constituting larger entities and helps avoiding strict sectoral divisions when seeking solutions for major societal challenges. Design competence is needed particularly for strategic and cross-sectoral activities of the public sector.

24.

PUBLIC SECTOR DESIGN COMPETENCE AND ITS UTILISATION ARE STRENGTHENED THROUGH THE ESTABLISHMENT OF A UNIT SIMILAR

TO MINDLAB OR BY CONTINUING THE DESIGN EXCHANGE PROGRAMME. (MINISTRIES, MUNICIPALITIES, SITRA)

Design promotion in the public sector is continued after the end of WDC 2012. There are two alternative models to enhance the development work either by establishing a unit similar to MindLab in Denmark or continuing Sitra's Design Exchange programme. The Design Exchange programme has developed and supported the adoption of innovative operat-



Sitra's Design Exchange Programme provides the public sector with design competence as well as new work methods and ways of thinking. Designers work as full-time employees in public sector organisations. Their duties focus on the following tasks: Regeneration of the area along the railway track in city of Lahti, development of customer-centred advisory services on energy efficiency at the Ministry of Employment and the Economy, dissemination of energy efficient solutions in the renovations of buildings, at the Ministry of the Environment, and the prototyping of home services for families with children at the Department of Social Services of the City of Helsinki. The programme has succeeded in introducing design methods and strategic design thinking to entirely new areas of application and integrating designers to the public sector organisations.

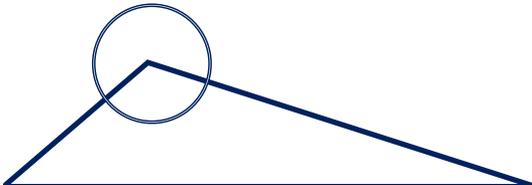
ing methods. It has increased the capacity for responding to major societal challenges and introduced new and user-driven design tools for the public sector.

25.

MUNICIPALITIES AND THE MINISTRIES ARE ENCOURAGED TO INCORPORATE DESIGN INTO THEIR SERVICE STRATEGIES. (MINISTRIES, MUNICIPALITIES)

In the future, customer need is a driver of public service development. Successful services are based on the design of an individual service from the customer's viewpoint on the one hand and on the design and functionality of service combinations and service paths on the other. The development of the services requires knowledge of value creation and the practices of design.

With the help of design, it is possible to enhance the user-friendliness of services, im-



Tekes' new Smart Procurement programme develops smart demand and creates preconditions for new markets, through which companies are able to improve their global competitiveness. In particular, the programme measures focus on sectors in which the public sector is a major player in the market development.

prove the efficiency of development processes and illustrate measures through prototypes and visualisations.

26.
THE DIALOGUE BETWEEN THE PUBLIC SECTOR AND DESIGN AGENCIES IS INTENSIFIED. (MINISTRIES, MUNICIPALITIES)

Public procurement is a way to obtain external design expertise. Successful public procurement requires understanding the opportunities design can provide and the capacity to recognise alternative solutions. For this reason, generating genuine dialogue between cities/municipalities and design agencies and designers is essential.

27.
DESIGN IS USED AS AN INSTRUMENT TO PROMOTE THE PRODUCTIVITY AND EFFICIENCY OF MUNICIPALITIES THROUGH THE RENEWAL OF PUBLIC SERVICES. (MINISTRY OF FINANCE)

The goals of productivity and efficiency require new methods for the organisation and production of services. Producing services that meet the needs of citizens are a central element of productivity. Service design offers a tool for assessing the genuine service needs of citizens and developing services to match them.

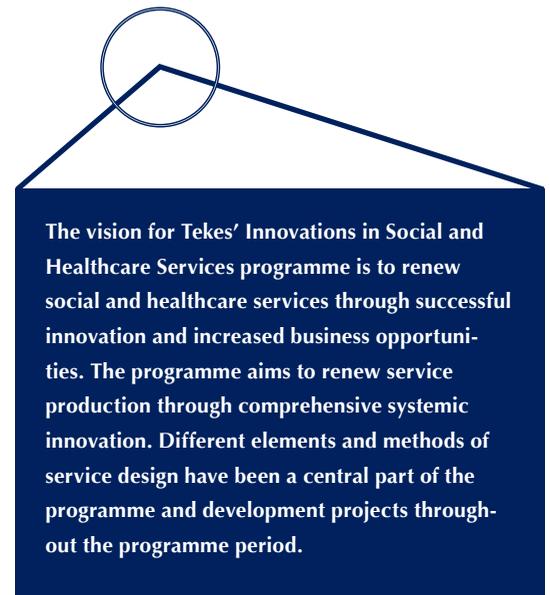
Citizens are activated to contribute to increasing the functionality and comfort of their own environment, and ownership for the development of the services is promoted. Citizens are

invited to participate in the design of public services through means such as co-design workshops.

28.
EXPERIMENTATION IS PROMOTED IN THE PUBLIC SECTOR. (MUNICIPALITIES, THE ASSOCIATION OF FINNISH LOCAL AND REGIONAL AUTHORITIES, MINISTRIES)

Competitions are organised in order to locate solutions for challenges: Top 10 most significant challenges of the public sector requiring solutions that excel in expertise and approach.

New, participatory methods are used in the competitions. Information of successful cases are shared, experiences are put to use and



learnings are extracted also from failure. New kinds of service structures and methods are developed using design competence.



In the 365 Wellbeing project, researchers, experts and master's degree students at Aalto University collaborated with experts from the cities of Helsinki, Espoo, Kauniainen and Lahti. The aim was to generate functional, pleasant and healthy living environments and seek tools for the promotion of a healthier lifestyle. The project combined more than 12 different disciplines. Development targets for the student courses included facilities and services of a service centre for the elderly, future scenarios of suburban life, a care path of psychiatric services and online health services. The project stressed the significance of design as the enabler of alternative service models and development. External expertise contributed new ideas and scenarios. The project was part of the programme for WDC 2012.

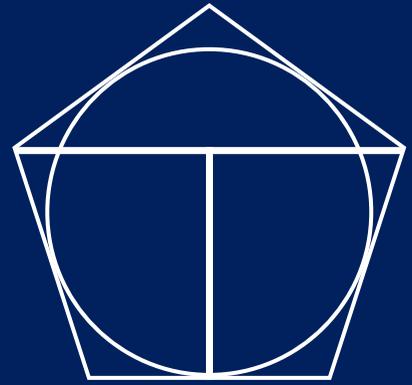
For more information, visit <http://living.aalto.fi/program/wellbeing/>

29.

DESIGN COMPETENCE AND THE UTILISATION OF DESIGN IN THE PUBLIC SECTOR ARE PROMOTED THROUGH EU'S STRUCTURAL FUNDS. (MINISTRY OF EMPLOYMENT AND THE ECONOMY, CENTRES FOR ECONOMIC DEVELOPMENT, TRANSPORT AND THE ENVIRONMENT)

New Structural Fund programmes are implemented between 2014 and 2020. The utilisation of design is supported through a national development programme by the European Regional Development Fund and through regional development programmes. The development of competence can be funded through the European Social Fund.

4



BACKGROUND
FOR THE REVIEW
OF THE DESIGN
PROGRAMME

The first national policy programme in the area of design, Design 2005!, was completed in 1999. The following year, the Government made a decision-in-principle on design policy in Finland. Even then, a main goal of the programme was understanding design as competitive factor. The programme also recognised the increasing significance of design in innovation activities.

Moreover, the programme aimed to incorporate design into the product development and business strategies of companies more firmly. As a consequence, Tekes implemented a technology programme on industrial design – Muoto 2005 – that promoted design in the research and development activities of the industry. The competitiveness of design service firms were improved by investing in business incubator services and the business competence of designers. The Academy of Finland, too, invested in multidisciplinary design research.

The design programme aimed to commit private actors and the public sector to the development of design. Thus, it constituted a significant opening.² According to an assessment produced by the follow-up group in 2004, design research, for example, achieved the targets set in the programme.³ The internationalisation of design, however, had not progressed as expected. Furthermore, business competence among design entrepreneurs and design communications require further development work.

Together with Espoo, Vantaa, Kauniainen and Lahti, Helsinki was chosen as World Design

Capital 2012. In addition to the cities in question, the Ministry of Employment and the Economy and the Ministry of Education and Culture were central financiers of the project. Funding was also obtained from business life. The Ministry of Foreign Affairs participated in the implementation of the project. World Design Capital promotes and supports the cultural, social and economic utilisation of design. World Design Capital Helsinki 2012 expanded the use of design in Finland. It increased understanding on the opportunities of design and achieved exceptional international visibility. The central theme of the year, Open Helsinki – Embedding Design in Life, drew attention to the expanded area of application for design. As a whole, the WDC Helsinki 2012 contained some 580 projects, a third of which were implemented by the public sector.

The Prime Minister Jyrki Katainen's Government Programme contained a commitment on a review of the national design programme in 2011. The broad-based co-operation - that began with the first national design programme and the WDC Helsinki 2012 project - has continued in the preparation of the Design Finland programme.

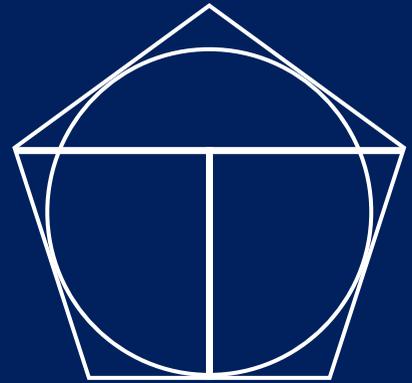
The current Government Programme also contains other measures for the promotion of design. The Government Programme supports cultural entrepreneurship and the generation of jobs in the creative sector and promotes cultural export and marketing competence in the creative sector. In addition, the need for reforms in employment, social security and tax legislation to improve the status of

persons employed in the creative sector will be determined. The preparation of a cultural environment strategy is also included in the Government Programme.⁴

The growing significance of design in innovation activities was also noted in the National Innovation Strategy prepared under the direction of the Ministry of Employment and the Economy and completed in 2008. In Action Programme for Demand and User-Driven Innovation Policy detailing the implementation of the National Innovation Strategy, design is used to better emphasise the perspective of users in innovation activities, and investments in design in both private and the public sector are encouraged.

The objectives of the second national design programme were also addressed in the Finnish Parliament when it discussed the Government Report on the Future of Culture prepared by the Ministry of Education and Culture. The parliament stated that service design, user-driven approach and sustainable development must be accounted for in the revision of the national design programme.

5



CHANGES IN THE
OPERATING
ENVIRONMENT

5.1

Design environment is altered

The structural changes in the Finnish economy reflect the transition of the global economy. The ongoing transition encourages economic actors to seek means for sustainable renewal. Significant societal challenges such as the ageing of population and global warming alter the operating environment. Simultaneously, urbanisation is accelerated, and societies are increasingly service dominated and digitalised. New participatory methods need to be adopted in both the development of products and services and policy making as a consequence.⁵

The ageing population, obesity, lack of exercise and the maintenance of psychological well-being pose challenges for the welfare society and healthcare systems.⁶ With the ageing of the population, the need for intelligent solutions and easy-to-use products, services and user interfaces increases. We must be able to perceive and develop complex entities. The development of services together with the products is considered of great importance.

Digitalisation continues in society. Terms such as ubiquitous information technology or ubiquitous society are used to describe technology which is embedded everywhere in the surroundings. Digital services and user interfaces become an increasingly integral part of our living environment, and the use of various sensors for the purpose of collect-

ing different types of data becomes more common. The sensors are connected via the Internet. This emergence of the Internet of Things (also known as the Web of Sensors or Living Services) transforms traditional business models and sectors of industry while blurring the boundaries between different sectors of industry.⁷ Digital products and services operate increasingly in real time and become more and more adaptable, as the users' ability to customise improves. Service production and distribution channels operate more and more in global information networks. The development can lead to a fragmentation of work but it can also generate opportunities for specialisation.

Political decision-making concerns increasingly vast system-level issues, such as the production and consumption of energy, urban planning and the utilisation of city information. This signifies the development of various intelligent urban ecosystems where information and communication technologies can be used to observe the activities and needs of users. At the same time, citizens have more opportunities to take part in the development of services and the urban environment and decision making within society. New methods such as co-design, crowdsourcing, open design and test environments, such as test beds and living labs, can be used to facilitate the participation. The participation will become more effective if both the authorities and businesses open up their data resources for further use, while the capacity to analyse big data needs to be developed more. The results of data analyses can be utilised both in policy

making and to improve the functionality of products, services and urban ecosystems.

5.2 Competitiveness from design competence and its utilisation

Design competence can be used to improve the competitiveness of both the economy and businesses. The term competitiveness usually refers to the capacity of an actor, such as an economy or a company, to survive in the changing circumstances of economic competition. National competitiveness can be defined narrowly or in broader terms. Narrowly defined, national competitiveness consists mainly of economic factors, whereas from a broader perspective it also incorporates factors contributing to overall well-being, such as a clean and safe living environment, purity of nature and functional public services. Thus, competitiveness on the national level is not just an economic issue but is also affected by the structures that form the foundation for well-being.

Economic success is ever more founded upon diverse competences and, consequently, various intangible factors. Various commodities have gone through a transition from tangible to intangible goods and much of the value of tangibles, too, is generated from advanced services sold in connection with the product.⁸

Recent economic studies have shed light on the mechanisms of global value networks

and value creation. An increasing share of value added for products is generated from intangible assets. With increasing frequency, value is generated from intangible factors of production, which include research and development activities, design, brands, marketing, organisational competence, intellectual property rights, distribution channels and different services.⁹ The increasing significance of intangibles requires complex expertise in value creation. As we are shifting towards value creation which is based on customer experience, companies need new business models and revenue logics which are based on a broad understanding of the customer value. Digitalisation, for example, has enabled companies to use intellectual property rights in a new ways and to create new business models.

Intangible capital also includes brand value, which is influenced by the image, trust and satisfaction of consumers as concerns the products or services of the company. In particular, brand value improves the effectiveness of investments in advertising and sales promotion.¹⁰ Value added based on intangibles includes elements such as experience, desirability and the integration of the design language of products and services into brand or trademark.

In companies design competence is seen as an opportunity to generate new business and value added based on intangibles. The competitive advantages are largely based on the use of intellectual property rights. In addition to copyright, the objects of design are protected by industrial property rights, most

typically in the form of protection of design rights, utility model or patent. In the realm of business, companies license rights to others and themselves use the ideas and licenses of others. Trademarks are used to symbolise activities, products and services. According to one estimate, in 2008, the value of business based on copyright in Finland would have been EUR 25 billion. The amount of value added generated by copyright business was estimated at EUR 7 billion or 4.7 per cent of the Finnish GDP.¹¹

The growing importance of IPRs (copyrights and industrial property rights) for business has magnified the effect of income taxation based on the use of these rights. Level of income taxation affects the choice of locating the research, development and innovation activities of companies. Several countries have adopted tax incentives on which tax relief can be claimed for income obtained based on various intellectual property rights.¹²

The economic impact of design is based on factors such as:

- strategic capability to respond to current challenges and people's needs in the right way at the right time,
- value creation based on intangibles, increasing the mass of IPR,
- creation of distinct and attractive products and services and higher price paid for them and the timing of the payment,
- cost savings generated through means of design.

An important factor contributing to successful use of design is the ability of the company to utilise design alongside other functions, such as marketing and technology, in a strategic manner.

Measuring the impact of design is difficult for a number of reasons. The significance of design is multifaceted and its impact manifests itself in connection with various other intangible factors, such as the impacts of research and development activities and marketing. Neither in Finland nor internationally a comprehensive definition of design, however, has been established, and statistics are not compiled in a globally comparable manner. Research results would, however, provide a clear indication that design has a positive impact on the performance of companies when measuring their profitability, share price, employment or export.¹³ According to studies, companies utilising design are also more innovative.¹⁴

In the Design Return on Investment (ROI) research project implemented by Aalto University and the Finnish Design Business Association and funded by Tekes, the topic was approached by exploring where the design investments of the companies were directed, what the benefits were obtained from the investments and how these benefits could be measured financially. In the study, various internal and external factors were also examined that could impact the success of design projects. When a company buys design services, the success of the project depends on factors such as the size of the cli-

ent company, the size of the investment and the competence of the design company.

In the project, the impacts of the design investment on the return of the company were divided into direct and indirect ones. The direct impacts were based on growth in sales or a higher contribution margin. Costs can be cut by improving productivity of the manufacturing process and altering the materials. Shortening the period of development for a product or service also reduces the costs. The indirect impacts are related to an increase in intellectual capital, which enables greater additional earnings from other investments. In order to have an impact on the sales, the use of design should be continuous and strategic in nature. Moreover, measured by growth in sales, a connection has been detected between the intensity of research carried out by the company and active use of design.¹⁵ The effectiveness of a design investment should also be observed in the long term, for example from the viewpoint of environmental impact.

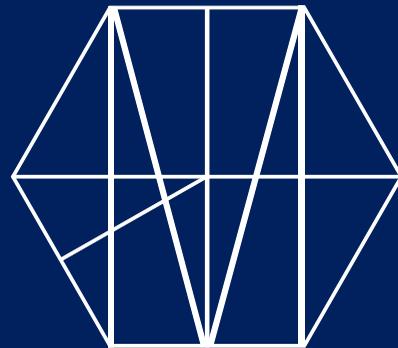
Internationally, numerous studies have been conducted to determine the value created by design. A study by the British Design Council (2007) looked into the use of design, people's understanding of design and the impact of design on the business of companies and the formation of value added. The conclusion was that design can improve the sales, profit, turnover and growth of the company directly and to a significant degree. Companies understanding this mechanism obtain competitive advantage in comparison with other companies. The research also showed that

shares of design-driven companies have done better in the stock market than the shares of other companies. On average, the turnover of companies using design grew by £225 per each £100 investment in design.¹⁶

A research project by the Swedish Stiftelsen Svensk Industridesign (SVID) (2008) found that the profitability of companies investing in design on a continuous basis was more than 50 per cent higher than that of companies that had not invested in design. The research targeted both service businesses and businesses in manufacturing industry.¹⁷

The Organisation for Economic Co-operation and Development (OECD) has completed a comprehensive study covering a period of several years on the significance of intangible investments for competitiveness. The conclusions highlight the fact that intangible investments, such as design, are significant from the viewpoint of competitiveness and growth. In their policies, nations should thus focus an increasing amount of attention to intangible investments such as design that are associated with positive economic externalities. Investments like this have a positive impact that extends beyond the target companies of the investments, promoting the growth of expertise and the adoption of new operating models in other companies, too. Governments are advised to encourage companies to make intangible investments.¹⁸

6



STATE OF DESIGN
IN 2012

6.1. Status in today's Finland

The strengths of Finnish expertise in design are considered to be process expertise, multidisciplinary co-operation teams and the ability to design functional solutions. Finnish design is known for its ability to combine practicality, beauty and function in a harmonious way. A culture of equality makes it easier to obtain user information and attain user insight. Internationally, Finnish design has a strong identity that is based on practical, functional, bold and distinctive material and design language. Also Finland's approach to demand and user-driven innovation policy is valued.¹⁹

In recent years, the development of Finnish design has been boosted especially by the establishment of Aalto University and the appointment of Helsinki and four other Finnish cities as World Design Capital 2012. Aalto University merges technology, economy and art with a particular focus on multidisciplinary. During WDC Helsinki 2012, the overall understanding of design improved in Finland, several development projects were implemented and awareness of Finnish design increased internationally.

The amount of design research conducted has increased significantly since the publication of the previous design programme. According to international evaluation, the design research carried out at Aalto University is of a high level.²⁰ However, the transfer of research results into practice and in particular their financial utilisation should be increased. Also,

important sectors of the future, such as green economy and the intangibles as a source of value creation, require new openings and a multidisciplinary approach from design research.

Aalto University and the University of Lapland offer university-level design education in Finland. Every year, approximately 200 students begin in the bachelor's and master's degree programmes offered by Finnish universities in the field of design.

Based on anticipated demand for workforce, design education provided in polytechnics has been concentrated to seven institutions. The largest of these are the Lahti University of Applied Sciences and the Savonia University of Applied Sciences in Kuopio. The annual intake in design degree programmes of polytechnics is about 330 students.

A proposal has been made to alter the funding model of polytechnics in order to create a better match between the funding model and their statutory tasks, including research and development work. The proposed model provides incentive for polytechnics to obtain external funding, an element that is likely to promote interaction between polytechnics and business life. This will most probably enhance interaction also in design-oriented development projects.

Finnish design education has also proved attractive for international students. At the Department of Design of the Aalto University School of Arts, Design and Architecture, where the overall number of students be-

tween 2007 and 2011 increased from some 650 to 730, the relative share of foreign students rose from 12 to 20 per cent.²¹

The Aalto University School of Arts, Design and Architecture also houses the Department of Media, offering teaching in graphic design. Master's degree programmes in New Media and Sound in New Media are offered at the Media Laboratory. Education and research in games design are being launched as a new field of study. In total, they have more than 300 students.

The expansion of design research has introduced a significant number of new contents to design education. This has improved the match between competence and the needs of the labour market. However, the level of design education varies, and the skills offered by the education do not, in all aspects, correspond to the demands of industry. The expertise of design professionals can be maintained and updated through further education and training. Yet also, user-centred product and service entities are currently increasing their significance, and the development work requires a new level of multidisciplinary expertise.

The positioning of graduates from Finnish design education in the labour market is not monitored in any systematic manner. From the viewpoint of effective utilisation of investments directed to education, the fact that international students have found it difficult to find employment in Finland after graduation also poses a problem.

Finnish large companies today are capable of utilising design in their business activities. Many successful Finnish SMEs also possess advanced user insight. SMEs, however, could utilise design competence to a significantly greater extent than they do today. They lack information on topics such as:

- the strategic utilisation of design to increase competitiveness,
- incorporating design competence as part of user-driven research, development and innovation activities,
- design leadership, design management and the building of the companies' internal design competence,
- the purchasing of design competence,
- the significance, protection and management of industrial property rights and copyright.

Businesses offering design services are small in size, making them flexible as co-operation partners. However, the small size of the companies may affect their opportunities to market and sell services and, most importantly, limit their areas of expertise. Design agencies have not achieved a significant increase in size or level of internationalisation in recent years. Some initial steps towards co-operation between design agencies have been taken, but the amount of close co-operation or active networking has been low.

In Finland, three clusters of design competence can be clearly identified: Helsinki and its surrounding municipalities, Lahti and Rovaniemi. Design education provided by universities and polytechnics and functional

co-operation between higher education institutions and the world of business has had great significance for the emergence of the clusters. A strategy for industrial design highlighting co-operation with business life and aiming to enhance the competitiveness of companies located in the city has been prepared in Lahti. Service design and a user-driven approach to innovation activities have been the corner stones of the design programme for Lapland.

Lapland has also developed an interest in arctic design, i.e. design arising from the arctic environment and an understanding of these circumstances, which also accounts for ways to adapt to demanding conditions. The Design Week events organised in Helsinki and Rovaniemi make design visible for both design professionals and citizens. The 'Design from Finland' label issued by the Association for Finnish Work encourages SMEs to differentiate themselves from competition with the help of design.

In Finland, the pressures to cut costs in the public sector require renewal in both strategies and the production of public services. With the help of design, it is possible to improve the service experience of users and, at the same time, reduce the cost of services. However in Finland, the public sector is only now taking its first steps in the use of design. The following challenges have been found to hinder the use of design in the public sector:

- design is not recognised on the strategic level, even though design thinking could be

employed to develop public administration into a more user-centred direction,

- the methods of design could be used broadly for the user-oriented development of public services and service paths,
- projects utilising design usually remain small in scale and separate from the activities of the organisation. The new solutions are not adopted in the organisation as a whole, diminishing their effectiveness,
- the design agencies lack expertise in collaboration with the public sector.

As a conclusion, central problem is that the supply of design services does not meet their demand, meaning that all possible resources are thus not effectively utilised. Also, the development activities contain both overlaps and fragmentation. Design communications, for example, has, in parts, remained ineffective and has not been able to fully convey the idea of a new, broader concept of design. The development work should be more centralised and aim at the achievement of shared strategic objectives, which would improve effectiveness.

6.2. International perspective to design competence

The significance of design for the development of society and for the strengthening of national competitiveness has led many countries to incorporate design as an important element of national strategies. In several European countries, design is seen as one aspect of successful innovation activities.

High-quality design research is significant for businesses, but in the experience of many countries, the research activities do not always correspond to the needs of business life.

In the design programmes of Denmark and the UK, design is perceived as an element of the development of both society and the



MindLab is a joint project by three Danish ministries, with the aim to produce both cost-efficient and user centric solutions to promote the well-being of citizens. MindLab functions as a meeting place and enables joint development projects for businesses, citizens and civil servants of the ministries. The projects focus on broad-based themes such as entrepreneurship, climate change, digital services, civil rights, employment services and occupational safety.

products and services of companies. In the UK, the involvement of the users of public services, such as local communities, in the design work is seen as a way of producing service models that are both cost effective and genuinely useful to the public. The central aim of UK's Design Council's 'Design for Innovation' strategy is the creation of innovations based on design.²²

In its vision for 2020, Denmark places particular emphasis on challenge-driven innovation and the development of public services. The vision 2020 considers Denmark as a design society and retains its position among the elite of design nations. Design is one element of the creative industries, which have been defined as one of the growth areas for Denmark, along with energy, climate, water and bioeconomy.²³

In Norway, design is seen as a tool for innovation activities: the government supports companies that are prepared to invest in design. In Sweden, too, the use of design is promoted for example in 'rapid development' innovation activities related to well-being and healthcare.

The significance of design is also increasing in the growing markets of Asia. Many Asian countries have grasped the opportunities entailed in design thinking and view design as an investment in competitiveness and well-being.²⁴ In these countries, the national systems for design are effectively developed, and investments are made in design education.

Out of the six Chinese cities in UNESCO's CreativeCities programme, three focus on design. These Cities of Design are Shenzhen, Shanghai and Beijing. China has also promoted design competence by establishing 27 design-oriented areas that produce product and service pilots utilising design for the market. The activities are guided by the aim to develop products for the country's vast internal market that instead of being labelled

'Made in China' also carry the label 'Designed in China'.

China is also experimenting with new methods of production: in Hong Kong, in particular, new businesses are being established that manufacture individually designed products to be offered directly to consumers via an online shop. In China, the broad degree programmes in design contain two to three years of professional education. In addition to China, also South Korea and Australia are making strong investments in the utilisation of design.

Design is also gaining foothold in Africa. Cape Town has been appointed World Design Capital 2014. The grounds for designation stressed Cape Town's objective to utilise design in the development of a socially responsible and sustainable society. This conveys the significance of design in the solution of social challenges.

6.3. Design in the European Union

Design and its utilisation have been incorporated as new themes also to the research and innovation policies of the European Union. In autumn 2012, the European Design Leadership Board, established on the basis of the Action Programme of the European Innovation Union, published recommendations on the opportunities of design as a source of well-being and growth. The report, entitled 'Design for Growth and Prosperity', is the view of an

expert group on how the position of design should be strengthened in European innovation policy on national, regional and local levels. The recommendations focus on aspects such as design in the innovation systems of Europe, in businesses, in the public sector and in the research and education system as well as the global distinctiveness of European design.²⁵

The group of experts recommends broader use of designers and the methods of design in the innovation systems and processes of businesses and the public sector. The majority of Europe's 23 million SMEs have yet to grasp the opportunities entailed in the utilisation of design. In addition, methods for measuring the impact of design investments in national economy and the business of companies should be developed. Also, better welfare ser-



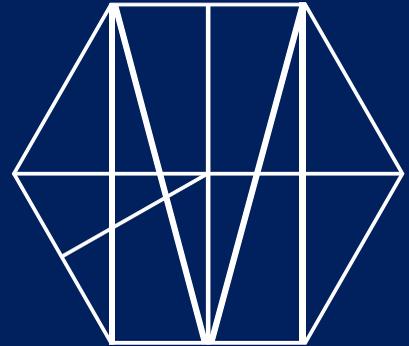
EU Framework Programme for Research and Innovation Horizon 2020, the national and regional Structural Fund programmes and the Creative Europe programme.



Creative Europe (2014–2020) combines the current Culture, Media and Media Mundus programmes. Central aspects in the programme are increasing expertise and capabilities and promoting the mobility of cultural professionals and their works. Also, knowledge base and the compiling of statistics on culture and the creative industries are strengthened and made more uniform. The programme is strongly linked to the aims of the Europe 2020 strategy and, more than previously, highlights the significance of culture and the creative industries in the generation of smart, sustainable and inclusive growth for Europe.

vices require increasingly innovative public procurement. Use of design has been found to generate savings and improve the level of service. The capability of managers and entrepreneurs as concerns the use of design should be improved, and design research and methods should be incorporated into EU research programmes in a more comprehensive manner.

Based on the recommendations, the EU Commission will prepare an Action Plan for the promotion of design in innovation policy.²⁶ Projects utilising design are able to apply for funding from several EU programmes starting in 2014. The most important of these are the



MONITORING AND
UPDATING OF
DESIGN FINLAND
PROGRAMME

The vision for the programme targets the year 2020. The Design Finland programme will be implemented between 2013 and 2020. The operating environment of design is likely to change also in the years to come, which is why the measures in the programme will be updated during the programme period. In 2016, an extensive interim review of the programme will be carried out.

Reports will be produced on the implementation of the design programme, and its progress will be monitored annually through the Finnish Design Centre network. The Ministry of Employment and the Economy together with the Ministry of Education and Culture will appoint a monitoring group for the Finnish Design Centre network. The group will consist of the representatives of business life, the public sector and the main funders of the centre. The task of the monitoring group is to assess the implementation of the design programme and produce a more specific definition of the tasks of the network.

APPENDIX 1

OBJECTS OF DESIGN IN 2013

Industrial design, such as

Home, free time, well-being, health

- Electronics, domestic appliances and equipment
- Vehicles, boats, bicycles, cars
- Furniture, lighting fixtures
- Interior design / place setting elements and materials
- Clothes
- Textiles

Profession and work environment

- Tools
- Machinery and equipment
- Medical treatment and healthcare
- System design

Service design

- Private / public producers and users,
- Tangible / intangible products
- Service experience and process
- Service systems, well-being, and commerce
- Service facilities

Design of identity and communication

- Graphic design, typography
- Company image, visual identifiers, symbols
- Communication, information, web
- Advertising
- Packaging

Digital design

- Gaming
- Software
- Animation
- Modeling
- Web design

Interactive design

- Social media
- Operating systems
- User interfaces
- Spatial and interior design
- Indoor spaces
- Temporary spaces (pop-ups)
- Elements, surfaces, colours and materials of architecture
- Lighting
- Exhibitions, fairs, events

Design of public environments: spaces, objects equipment

- Means of public transport
- Information and guidance
- Lighting and atmosphere
- Spaces and furnishings of urban environment
- Natural elements

Community design

- Events, art, entertainment
- Social networking

Crafts and art

- Works of art, objects made of wood, glass, ceramics, etc.
- Unique art, installations, events
- Studio crafts
- Craft production
- Illustrations, comics

Knowledge base in design/Theory and research

- Disciplines applied
- social sciences, technology, sociology, art history, aesthetics, psychology, ecology, economics, behavioral sciences, etc.
- Values and attitudes, trends, quality
- Technology and equipment used in design work

Design Leadership, Design Management

- strategy, processes, competences, design thinking, creative leadership

APPENDIX 2

PREPARATION PROCESS OF THE DESIGN PROGRAMME

The National Design Programme was revised under the direction of the Ministry of Employment and the Economy in co-operation with the Ministry of Education and Culture. Openness was selected as the theme of the preparation work, and it guided the data collection and the publication of results within the programme. Five workshops open to everyone were organised during the preparation work and an open social media channel was used for communications. The workshops addressed the current state of design in Finland as well as future vision, strategic objectives and actions related to design. The workshops included actors and policy makers in the field of design who shared topical views on the matters in question directly from the field.

The preparation of the programme draft was guided by the Design Finland steering group led by Olli-Pekka Kallasvuo. The steering group contained a broad representation of Finnish business life, public sector, design organisations, universities and polytechnics. The members of the group were Satu Miettinen, University of Lapland; Helena Hyvönen, Aalto University; Ari Känkänen, the Rectors' Conference of Finnish Universities of Applied Sciences, Arene association; Salla Heinänen, Ornamo association; Mikko Kalhama, Design Forum Finland; Olli Mannerkosti, Fjord Helsinki; Kari Kauniskangas, Fiskars Corporation; Hannele Pohjola, the Confederation of Finnish Industries (EK); Pekka Timonen,

the International Design Foundation; Anne Stenros, Kone Corporation; Riikka Salokannel, Lahti Science and Business Park Ltd; Marco Steinberg, Sitra; Marita Sandelin, Grafia association; Tiina Tanninen-Ahonen, Tekes; Kari Sartamo, Centres for Economic Development, Transport and the Environment (ELY Centres); Päivi Bergroth, the National Council for Design; Petri Lehto, the Ministry of Employment and the Economy; Liisa-Maria Hakala-Zilliacus, the Ministry of Education and Culture, and Katri Lehtonen, the Ministry of Employment and the Economy.

The following individuals also took part in the preparation work: Reijo Aholainen, the Ministry of Education and Culture; Antti Eskola, the Ministry of Employment and the Economy, and Mikko Martikainen, the Ministry of Employment and the Economy.

The aim of the steering group was to achieve a common vision of the direction, objectives and contents of promoting design in Finland. The main emphasis in the work was in creating a goal-oriented action programme. In the preparation work, the steering group was supported by Creadesign Ltd, led by CEO Hannu Kähönen. The practical work was the responsibility of Heidi Hyytiäinen and communications agency Hill and Knowlton Finland Ltd, Ulla Jones and Merja Aura. They implemented the data collection and participatory work used as the foundation of the programme and, based on the material collected, produced a draft of the programme for the steering group to develop further.

REFERENCES:

1

Ministry of Employment and the Economy (2013). 21 Paths to a Friction-free Finland, Report of the ICT 2015 Group, Ministry of Employment and the Economy Reports, Enterprise and Innovation Department 4/2013 (summary in English).

2

Oksanen-Särelä, Katja (2012). The Internationalisation of Finnish Design – support, impediments and opportunities (summary in English).

3

Ministry of Education (2004). The Follow-Up Report on the Design 2005! Programme, Ministry of Education publications (in Finnish).

4

The Finnish Parliament 38/2010 vp (in Finnish).

5

Ulkoasiainministeriö (2012). Team Finland. Taloudellisten ulkosuhteiden verkosto (in Finnish).

6

Himanen, Pekka (2012). Sininen kirja (in Finnish).

7

Lehti Matti, Rouvinen Petri, Ylä-Anttila Pekka (2012). Suuri hämmennys: Työ ja tuotanto digitaalisessa murroksessa (ETLA B254) (in Finnish).

8

Tekes Review (2008). Intangible Capital and the Economic Growth, Huovari Janne (edit.), Tekes 230/2008 (in Finnish).

9

Ali-Yrkkö, Jyrki (2013). Mysteeri avautuu, Suomi globaaleissa arvoverkostoissa (ETLA B257) (in Finnish).

10

Aspara Jaakko (2012). Design Return on Investment, Fennia Prize Seminar.

11

Finnish Copyright Society (2010). Economic Contribution of Copyright-based Industries in Finland 2005 – 2008. Publications No 29 (2010), Finnish Copyright Society.

12

Ministry of Employment and the Economy (2012). IPR tax incentives, Ministry of Employment and the Economy Reports, Department for Enterprises and Innovation, Reports No 32/2012 (summary in English).

13

European Commission (2009). Commission Staff Working Document. Design as a driver of user-centred innovation.

14

European Commission (2009). Commission Staff Working Document. Design as a driver of user-centred innovation.

15

Aspara Jaakko(2012). Design Return on Investment. Fennia Prize Seminar. The Design ROI Research Project (2012). Measurable Design, the Aalto University, Tekes, World Design Capital Helsinki 2012 and Finnish Design Business Association FDDBA.

16

The Design Council (2007). The Value of Design Fact Finder, Report.

17

Stiftelsen Svensk Industridesign (2008). Svenska företag om design. The Design ROI Research Project (2012). Measurable Design, the Aalto University, Tekes, World

Design Capital Helsinki 2012 and Finnish Design Business Association FDBA.

18

OECD (2013). Supporting Investment in Knowledge Capital, Growth and Innovation.

19

Danish Enterprise & Construction Authority (2011). The Vision of the Design 2020 Committee.

20

Academy of Finland (2009). Research in Art and Design in Finnish Universities, Publication of the Academy of Finland 4/09. Aalto University (2009). Research Assessment Exercise, Panel Reports Panel 9: Architecture, Design, Media and Art Research.

21

Oksanen-Särelä, Katja (2012). The Internationalisation of Finnish Design – support, impediments and opportunities (summary in English).

22

The Design Council (2011). Design for Innovation.

23

Design Finland Programme Workshop, 4.9.2012.

24

Icograda (2010). The World Design Survey 2010.

25

European Commission (2012). European Design Innovation Initiative (EDII). Report and Recommendations of the European Design Leadership Board.

26

European Commission (2012). Industrial Policy Communication Update, (COM) 582 final.



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