

Kristiina Soini-Salomaa (ed.)

LAB Design Annual Review 2020

The Publication Series of LAB University of Applied Sciences, part 12



 **LAB University of
Applied Sciences**

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About the authors

Oona Casalegno, MA (Creative Sustainability), BA (Industrial Design), is a senior lecturer and a tutor teacher at BA level Packaging Design and Branding program at the Institute of Design and Fine Arts, LAB University of Applied Sciences. She has a strong background in developing packaging solutions in multidisciplinary teams in multinational corporations. She is interested in regenerative thinking, innovations, and design education.

Minna Cheung, MA, has been senior lecturer and programme coordinator at LAB Institute of Design and Fine Arts, Fashion Design, since 2012 and Wearable Design since 2017. She has been studying the change in students' design values since 2010. Before starting as a full-time teacher, she worked in several fashion companies in Finland and has a many years' experience in fashion entrepreneurship. Her interest is creating sustainable and profitable concepts for fashion start-ups.

Kati Kumpulainen, BBA (Business), B.A (Clothing and Textiles), is a RDI specialist and project manager in Lahti University of Applied Sciences, Institute of Design and Fine Arts. She is interested in service design, design thinking, future studies and international business.

Mikko Kyle, MSc (Business), is a business developer working in Lahti Region Development LADEC Ltd. His main interest is to help companies to define the strategic development areas and operational activities to develop them further. Design360 is the main idea behind his work. Design as a tool to plan, and design as a tool to execute.

Mirja Kälviäinen, Ph.D (Arts and Culture) is a principal lecturer and course leader for the MA level design and media studies at the LAB University of Applied Sciences, Institute of Design and Fine Arts. She also carries docentships in two other Finnish universities. Her research work has included methods for user driven design, design thinking and service design with front end innovation process and co-design applications. Lately her research interest has concentrated on design for environmentally sustainable behaviour change.

Laura Montonen, BBA (Marketing and Communication), is an Event Coordinator at LUT-University and LAB University of Applied Sciences, Institute of Design and Fine Arts. She is interested in development and organization of event production and communication.

Tommi Mustaniemi, Bachelor of Arts and Design. Works as RDI specialist at LAB University of Applied Sciences and is a communications specialist at Design Venture program. He also is a part time teacher at the Institute of Design and Fine Arts and a video & graffiti artist.

Katariina Mäenpää, Ph.D (B.A.) is a RDI specialist and project manager in Lahti University of Applied Sciences, Institute of Design and Fine Arts. Her background is in-depth marketing and consumer behavior boosted with studies in Psychology and Sociology. She is familiar with innovations and inventiveness, advanced banking services, digital marketing, EU-projects, service design and co-creation.

Reetta Nousiainen, MA, worked as a RDI specialist at LAB University of Applied Sciences and was a project manager in the 'Culture Tourism for City Breakers' -project. She is specialised in sustainable development of the cultural environment and now works as a researcher at Lahti City Museum.

Noora Nylander, M. Sc. (Pack. Tech.), B.A. (Pack. Design), has been a senior lecturer and programme coordinator of Packaging Design and Branding at LAB University of Applied Sciences, Institute of Design and Fine Arts since 2010. She has been working also as a specialist in several EU-projects. Her main interests are sustainable packaging and industrial design, user-centred packaging design and designing consumption well as development of new packaging solutions.

Anna Palokangas, BBA (Business), B.A. (Product Design), is a service designer who works as a teacher and RDI specialist at LAB University of Applied Sciences, Institute of Design and Fine Arts. She is interested in developing customer experience and in using service design as a tool for business and organization development.

Outi Peippo, Master of Culture and Arts (Fine Arts), Bachelor of Culture and Arts, (Fine Arts), is a senior lecturer and project manager in LAB Institute of Design and Fine Arts. She is also working as a visual artist using digital tools especially in context of drawing and printmaking.

Lotta Pyykkönen, M. Sc (Cultural Research), B.A. (Fine Arts), is lecture of Fine Arts at the LAB Institute of Design and Fine Arts. She is also working as a visual artist (specialized in printmaking). Her main research interest is sociology of art, specifically artists position in society and in the cultural field.

Annariina Ruokamo, Master of Arts (Art and Design), is a RDI specialist and a part-time teacher at Wearable Design programme at the Institute of Design and Fine arts at the LAB University of Applied Sciences. She started as a part-time teacher in sustainability of the fashion industry in 2017 and has worked in several Finnish clothing companies as a designer and sustainability advisor before starting full-time in LAB in 2019. Her interests lie in sustainable and circular design and in concrete tools for creating sustainability through design.

Veli-Pekka Rätty, Doctor of Arts (Art and Design), MSc (Tech), works as a RDI Specialist at the Institute of Design and Fine Arts, LAB University of Applied Sciences. His research and design interests include mixed reality, broadcasting, interaction design, social media, storytelling, user experience design and design competence.

Ulla Saarela, MBA (Entrepreneurship and Business Competence), BBA (Financial Management of Social and Health Care), is an adviser in LAB University of Applied Sciences, Institute of Design and Fine Arts. She is interested in service design, culture and culture tourism.

Kristiina Soini-Salomaa, Ph.D (Ed.) is a Research, Development & Innovation (RDI) Director for design focus area in LAB University of Applied Sciences. Her main research and professional interests are strategic development of RDI activities, design research, design thinking methodologies, future studies and forecasting.

Kristiina Soini-Salomaa

Foreword

This is the fourth review of the publication series named the Lahti Design Annual Review, which presents the latest research, development and innovation activities in the context of design written by experts from LAB University of Applied Sciences. This review presents some of the significant actions that have been carried out as part of our projects to reach the set development goals.

In the first article Design for Smart Specialization in the Region of Päijät-Häme Kristiina Soini-Salomaa opens up the background for Smart Specialization in Päijät-Häme. The road map for design focus area is in action phase and the roadmap for Päijät-Häme region is nearing completion. The background, some strategic approaches and practical implementations are described.

Based on research studies, investing in design increases customer satisfaction, product usability, communication, and profit. Companies that are design-mature may see more than double returns compared to companies who are not. The article by Veli-Pekka Räty, Mikko Kyle, Laura Montonen and Tommi Mustaniemi describes how The Design Venture Programme has coached small- and medium-sized enterprises and microenterprises to be more design-mature for their growth and internationalisation.

The paper by Anna Palokangas and Kati Kumpulainen discusses the advantages of

service design for the service development of the public sector and presents the City as a Service project. The objectives of the project are to develop and pilot the city services together with businesses by using design methods so that services become more user driven. As a result, 'Lahti at your service' service models are ready and there will be practical examples of service design used in improving the services of a more business-friendly Design City Lahti.

There is a variety of design tools available for guiding the designer's work in accordance with the principles of circular design. Annariina Ruokamo and Oona Casalegno open up the developed tools and guide for designers. The guide diversify the reflection done during the design process and extend the thinking to more clearly include different points of view from production to consumption, through maintenance and further processing of the product, all the way to the end of the product's actual life cycle.

The Integration of Fibre-based Packaging Solutions for the Needs of SME's project has developed environmentally sustainable packaging materials and design solutions. In the context of packaging, the project was also interested in packaging-related services linked to sustainable food consumption. The article by Mirja Kälviäinen discusses the differences between traditional package design processes and the design processes where

the designed sustainable change would also require changes in the packaging solutions. This kind of process follows the idea of starting from strong systems and service process-based sustainable solutions instead of supporting old unsustainable systems and designing only one product inside them to be sustainable.

During the COVID-19 crisis new service solutions have emerged providing food delivery services. Entrepreneurs are coping with the crisis by being creative and packaging is an important device in this battle. The paper by Noora Nylander describes the phenomena of black swans, white swans, and grey rhinos in future forecasting and how they affect the packaging industry. It also shows examples of packaging as a service concept during COVID-19 pandemic. In hindsight it describes how the pandemic increased the importance of packaging services and guesses how the world of packaging might look afterwards.

The REHOME project got a form in a furniture collection for temporary housing and emergency accommodation designed by young design students. The aim of the project is to commercialise the furniture collection in order to create new business opportunities and employment possibilities for the Lahti region's bio-based industry. Project manager Katariina Mäenpää opens up the collaboration between university and business in Päijät-Häme region. The combination of research and education as well as business, provides a vital platform to design new sustainable products and services and to develop competences for future needs.

LAB Institute of Design and Fine Arts is

leading the research of designer's role in the circular economy of textiles in the project Telaketju 2. The goal is to find out how to consider recycling already in the early stages of the design process. The paper by Annariina Ruokamo discusses the different circular design concepts and strategies to ensure waste minimization already at the design stage and whole life cycle of a product by considering all the steps during the product lifecycle – design, manufacturing, logistics, retail, use, reuse and finally recycling or disposal.

The paper by Minna Cheung continues on theme of textile circularity. Renting clothes is seen as one way of reducing the environmental load caused during the production and use of garments as well as decreasing the amount of textile waste. Consumers' attitudes towards renting clothes and owning them are slow to change. With garments intended for renting, the design process should take into account different characteristics than with garments intended for purchasing. Choosing durable materials, creating garments that are easy to modify, and making sure that the design fits easily on different customers is essential for rental clothing, whereas these are secondary features when designing clothes that will be purchased for personal use.

Reetta Nousiainen and Ulla Saarela discuss in their article can culture and tourism actors find each other? The field of culture tourism includes a diverse variety of actors and greater cooperation between the sectors is needed. Culture tourism studies are one way of responding to this need. This article deals with the challenges that affected

the Culture Tourism for City Breakers project and the results that were achieved during the project.

Visual artists commonly use digital devices and programmes to produce art, but teaching visual arts with digital tools is still a new concept. How is it possible to teach visual arts online and how can the web be used to teach art? What other benefits can online teaching have for art? These issues are discussed in the paper by Outi Peippo & Lotta Pyykkönen. Yli vaaran vuosien project developes together with four universities of

applied sciences digirtal tools and methods to teach visual arts.

I warmly thank all the authors who made it possible to publish this review. I hope that this review gives you some new insights and further ideas in multidisciplinary and interdisciplinary design education, research and development.

Lahti, 20 November, 2020

Dr. Kristiina Soini-Salomaa
RDI Director, Design

Kristiina Soini-Salomaa

Design for Smart Specialization in the Region of Päijät-Häme

Summary

The constantly accelerating pace of social, economic and technological change challenges designers to play a more strategic role in the long-term development of regions, the public sector and business. Design and design thinking are gradually understood as a comprehensive approach to solving societal, ecological and economic challenges. Design is also increasingly seen as a tool for developing processes, organisations and systems, without forgetting, of course, the development of user-oriented products and services based on people's needs. In order to achieve real effectiveness, a strong shared ambition is needed in order to build national and regional ecosystems. We also need the ability to build long-term strategies and concrete action plans (roadmaps) with the key stakeholders in the ecosystem.

In the Päijät-Häme Regional Development Strategy and Plan, design has been highlighted as one of the spearheads of smart specialisation. The region has also profiled itself as a pioneer in the circular economy. Special strengths in the region include the application of design competence to different sectors thanks to education in the field of design. The role of design is also becoming stronger in the development of sustainable solutions that support the circular economy. This article describes the process of building an ecosystem for design in the Päijät-Häme region and preparing a roadmap for 2020–2030, which is currently underway. The roadmap is an action plan for implementing the selected themes and measures.

Keywords: roadmap, regional development, design, smart specialisation

Design as a Part of Innovation Policy

Since 2010, design has been taken into consideration in EU innovation strategies, and its role appears to be strengthened in the latest innovation and growth policy programmes. The European Commission's innovation strategies raise the strategic importance of

design as a prerequisite for socio-economic growth and development. This has triggered development measures in many European countries to place design at the heart of innovation policy at regional, national and international level.

Design and design thinking are gradually

understood as a comprehensive approach to solving societal, ecological and economic challenges. Design is also increasingly seen as a tool for developing processes, organisations and systems, without forgetting, of course, the development of user-oriented products and services based on people's needs.

The constantly accelerating pace of social, economic and technological change challenges designers to play a more strategic role in the long-term development of regions, the public sector and business. In order to increase the significance and effectiveness of design, the following areas should be invested in:

- Significant extension of the exploitation and use of design
- Highlighting the significance and impact of design
- The sustainability and lifecycle of products and services in the circular economy
- Design for behavioural change (social and ecological sustainability)
- Significant development challenges in the public sector
- The role of design in innovation and regional policy
- Expanding design competence and design research

- Raising the design competence and understanding of design of the stakeholders, innovation activities and the business sector

A strong shared ambition is needed for building national and regional ecosystems in order to achieve real effectiveness. We also need the ability to build long-term strategies and concrete action plans (such as roadmaps) with the key stakeholders in the ecosystem.

The SEE Design Policy Monitor (2015) has developed a Design Innovation Ecosystems Framework, which contains nine components that identify the key tasks and actors either at national or regional level (Figure 1). The ecosystem descriptions provide a systemic view of the tasks and identify the key actors that implement them in the ecosystem or region. (Whicher & al., 2015)

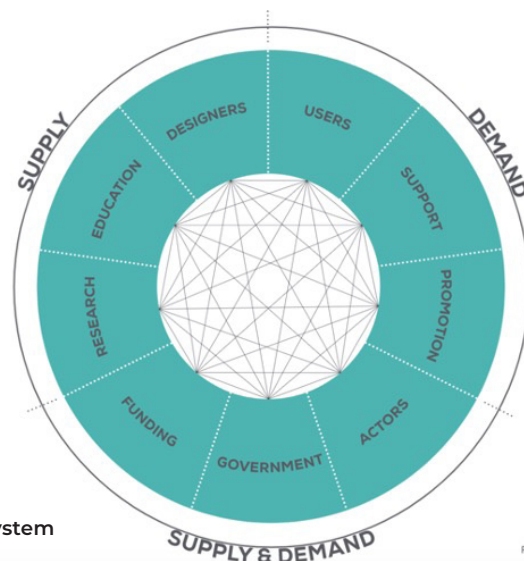


Figure 1. Design Innovation Ecosystem (Whicher & al. 2015).

Figure

The ecosystem consists of the existing needs, measures and implementers either nationally or regionally. The ecosystem describes the regional situation in terms of each activity and the tasks of the implementers.

1. The Users section describes how design is used in companies in the region and in the public sector in accordance with, for example, the Design Ladder model (1. No design, 2. Design as styling, 3. Design as process 4. Design as strategy).
2. Support describes the support measures offered by the region in order to use design in business activities (sparring, education).
3. The Promotion section describes exhibitions and sales activities, campaigns and competitions that make design visible and raise awareness of the importance of design.
4. The Actors section describes the key developers of the ecosystem, such as development organisations, associations, foundations and higher education institutions.
5. The Policy section describes the integration of design into national and regional strategies (e.g. innovation policy, regional development, smart specialisation, design strategies).

6. The Funding section describes the available financial instruments that can support and finance the design investments of companies, the public sector and other actors.

7. The Research section describes the regional RDI activities, including cooperation between higher education institutions and the business sector in the region.
8. The Education section describes the design education available (secondary level, higher education, continuing education).
9. The Designers section describes the profile, availability and networks of designers in the region.

Smart Specialisation in Päijät-Häme

Smart specialisation has become a strategic tool for regional development. It is a design and implementation model for regional innovation policy, according to which countries and regions must identify and select their own areas of strength. The importance of smart specialisation will be significantly strengthened in the next strategy and funding period of the EU.

The Päijät-Häme Regional Development Strategy and Plan and the Competitiveness Strategy of the Lahti Region have highlighted the circular economy, design and sports and experiences as the spearheads of smart specialisation (Regional Council of Päijät-Häme 2017). Design plays an important role in

the development of sustainable solutions that support the circular economy. A similar smart specialisation profile cannot be found anywhere else at the European level. Furthermore, in the field of higher education, LAB is the only university of applied sciences that has selected design as its strategic area of expertise (design as an area of expertise). This means that there is a strong ambition to make the Päijät-Häme region and the LAB University of Applied Sciences and their partners the leading hub of sustainable design expertise and design industry. A solid ecosystem for this purpose is provided by the design education offered by the LAB University of Applied Sciences, and its strong expertise in design and the related RDI activities, the LUT Group, the surrounding design-intensive industry, designers, and organisations supporting design, such as the Lahti Region Development Company LADEC and the Finnish Design Foundation.

In Päijät-Häme and Lahti, design expertise has long been used in the development of a built environment based on the residents' needs, the streamlining of public services and the building of a city brand. In the private sector, internationally renowned examples of design-intensive companies can be found in the technology, furniture and textile industries. For decades, it has been considered important in Päijät-Häme to include design as a part of increasing the attractiveness of the region and enhancing the product and service development activities and competitiveness of companies.

Päijät-Häme's strong investment in sustainability and the circular economy has brought significant visibility to the region,

as well as business activities and investments. In 2021, Lahti will be the European Green Capital, which will support the region's efforts to be profiled as a pioneer in sustainable solutions. Lahti has set itself a target to be a carbon-neutral city by 2025, to cut greenhouse gas emissions by 80% compared to the level of 1990 by 2025, and to become a zero waste city based on the circular economy by 2050. The combination and expertise of the circular economy and design ecosystems in the region can achieve real smart specialisation which will benefit the companies, industry, the public sector and higher education institutions of the region.

Päijät-Häme Design Roadmap

The Päijät-Häme Design Roadmap 2030 is currently under construction, in which actors in the region plan joint measures on how to achieve the shared vision: In 2030, Päijät-Häme will be an international and versatile success story in sustainable and responsible design, which will produce significant business growth and societal benefits.

The Päijät-Häme Design Roadmap defines the objectives and measures for the use, visibility and strategic status of design in the Päijät-Häme region. The project has created a common vision for design in the region and outlined the key themes. The planning of measures at regional, national and international level, and the definition of the actors' responsibilities are currently underway.

The main objective of the roadmap is to promote business related to sustainable design from the perspective of regional development. The aim is to support change

Vision and Themes



Design for Business Development

- Design thinking and design tools for the development of business, products and services



Design for Wellbeing

- Design for the development of efficient services, customer management and encounters

In 2030, Päijät-Häme will be an international and versatile success story in sustainable and responsible design, which will produce significant business growth and societal benefits.



Design for Sustainable Consumption

- Design as a driver for material efficiency and behavioural change



Design for Housing Solutions

- A piloting and testing environment for sustainable housing (space, furniture, technology)

Figure 2. Päijät-Häme Design Framework (the Päijät-Häme Design Roadmap 2020 project).

in the current processes, products and services of companies in the region in order to use design as a driving force for business value and growth, to promote the creation of new business and to find new practical solutions to accelerate product and service development in SMEs. The aim of the project is also to strengthen expertise related to design in the area and to promote the internationalisation of the design ecosystem. Progress towards internationalisation will be made gradually so that the development themes defined in the roadmap that are important for the development of the region will be strengthened at three levels: regional, national and international.

In the roadmap, the measures are gradually planned for each development theme for a time frame of 10 years. The development themes are based on sustainability and the circular economy. The themes under development are: Design for Business Development, Design for Ecological Consumption, Design for Wellbeing Development and Design for Housing Solutions. The measures will proceed taking into consideration the strategic stages of the use of design (see: Design Ladder) (stage I Increasing the understanding of design, stage II Increasing the conscious use of design, stage III Making full use of design) (Figure 2).

The role, tasks and measures of key actors in the region are also defined in the roadmap using the Design Innovation Ecosystem framework (Figure 1). The Institute of Design and Fine Arts of the LAB University of Applied Sciences has taken on the role of an ecosystem coordinator and driver of innovation. It will ensure that progress is made in the strategy process and roadmap work and, in the future, it will take care of the updates together with the Regional Council of Päijät-Häme.

The roadmap will be published at the end of 2020, and the actors, measures and sustainable design in the region will be visibly showcased at the Lahti Green Design Week event in spring 2021. The Design Week is part of the European Green Capital 2021

events in Lahti. Lahti Green Design Week is a showcase for the implementation of sustainable design, product development and human-centred solutions for a sustainable lifestyle in Päijät-Häme. The design week includes expert events for companies, content supporting design education for children and young people, as well as workshops, exhibitions and sales events aimed at the wider public. (<https://greenlahti.fi/en/events-archive>).

The roadmap sets the direction for Päijät-Häme towards international cooperation. By building a strong regional design ecosystem, we will have ample opportunity to launch cooperation particularly with other European ecosystems and to succeed in the areas of expertise we have decided to focus on.

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**Veli-Pekka Rätty, Mikko Kyle, Laura Montonen,
Tommi Mustaniemi**

Design Venture Programme – Design to Speed Up Businesses

Summary

Based on research, investing in design increases customer satisfaction, product usability, communication, and profits. Companies that are design-mature may see more than double returns compared to companies who are not. The Design Venture Programme has concentrated on coaching small- and medium-sized enterprises and microenterprises to be more design-mature for their growth and internationalisation.

Keywords: business coaching, communication, design, design leadership, design management, digital communication, enterprises, microenterprises, small and medium-sized enterprises, usability, user experience, user satisfaction, visual communication

Design makes a profit

The Design Management Institute's (DMI) 2015 Design Value Index (DVI) is based on a portfolio of 16 publicly traded stocks from companies considered to be design centric. This is contingent on a set of criteria that reflects best practices in design management. The DVI shows a 211% return over the S&P 500 (Rae 2016).

Why do design-centric companies make more profits than other companies? Rae (2016) sees design as a highly integrated and influential force that enables the organisation to achieve outsized results. Buley (2019) looked closer at qualitative aspects of how companies can create better business out-

comes through design. She detected that among the most design-forward organisations, design was well integrated into the product development process with a senior team and visible on the product roadmap. In fact, she continues, there is a direct correlation between the number of business benefits that design drives and the degree of organisational adoption of design.

When organisations establish the right conditions for design and make room for this in their core processes, they also experience a deeper customer understanding, engage in bolder exploration and experimentation, and make more informed decisions vetted through the continuous testing and learning process

that design enables.

Hence, by investing in design, design-mature companies increase the usability of their products and services and the user satisfaction. By fulfilling their users' needs better and more accurately than other companies, design-mature companies are able to be more efficient, profitable, and achieve a better position. All these in turn lead to better profits (Räty 2019).

The Design Venture Programme

The Design Venture Programme (2018-2020) has promoted design to speed up businesses, especially SMEs and microenterprises. Our aim is to create successful businesses and foster their growth and internationalisation.

In our current target area, the Lahti region, 99.0% of the region's enterprise units are SMEs. In 2018, the total number of units was 13,649 of which less than a per cent, 134 units, were large companies. The majority were units with 1–4 persons, i.e., 11,693 units, or 85.7 % of all enterprise units. The Design Venture Programme concentrates on enhancing the businesses of this large group of enterprises.

Within the programme, design means product and service design, but also refers to communication, especially digital and visual communication and branding, among other areas.

To reach enterprises and address the importance of design, the Institute of Design and Fine Arts at the LAB University of Applied Sciences and the Lahti Region Development LADEC have produced the Design Venture Programme together, and we reach companies with our joint service process.

Service process

Co-operation between two organisations combines two different sets of expertise and roles in the service process. LADEC operates in various fields of business development. It is focused on helping new start-ups and other local companies to commercialize new services and products, and to develop their operations in diverse activities. Within this process, design plays an important role, and that is the reason for being part of the Design Venture process. The word 'venture' describes the process quite well. Business is a venture and companies should consider design as a way of creating outstanding businesses.

An essential part in this process is LADEC's active communication with companies in various ways: contacting companies and asking about their development needs as a continuing process, and to determine what kinds of needs there are in their businesses. There are six areas of design which are the most important: products, services, physical space, internet presence, social media, and brands (see Picture 1).

When LADEC finds a need of an enterprise, the first step is to evaluate its need deeper. This evaluation is carried out together with the LAB Institute of Design and Fine Arts. Following the evaluation, we have a short brief for development. The company will be part of the evaluation on how to go forward with its need. In many cases, some kind of student-project will be the first step to create development concepts. If the company need is very clear, there is always the possibility of contacting a design company straight away to fulfil their need.

Which way to move forward will depend on the needs of the company, because it is not the same to have a group of students or professional designers doing the development work. In the process, both LADEC and the LAB Institute of Design and Fine Arts will make sure that the enterprise will get what it needs.

Enterprise coaching

Since the beginning of the Design Venture Programme in March 2018, we have coached 39 SMEs and microenterprises, and several additional young entrepreneurs planning to set up companies, from various sectors to

understand the role of design in their businesses. Additionally, we have coached them to buy, design services, and use designers, and we have coached designers to sell their services to SMEs and microenterprises. The enterprises' business areas include diverse activities such as coffee roasting, food, sports equipment, software, car tuning, video production, adult education, and online shopping.

We have coached groups of companies together. The coaching themes have included branding, digital communication, video production, social media, and electronic commerce, for example (see Picture 2).

Picture 1. One fundamental item of the service process has been enterprise coaching. Here Väinö Kaalikoski, the CEO of the SB Ecommerce Group, is giving a keynote speech on the ABCs of electronic commerce in February 2019 (Photo: Tommi Mustaniemi)



Although we speak about design, giving professional advice on digital communication has been indispensable for the growth of our enterprises.

Typically, the coaching has begun with the strategic importance of design aspects and moved onto implementation. For example, we began with the importance of videos on social media and gave practical examples and instructions how individual entrepreneurs can produce their own promotional videos for marketing and communication.

In addition, we have promoted and coordinated some of the of the LAB University of Applied Sciences educational courses to give advice to groups of the companies in our programme. Students have examined

companies' web sites and their usability, and provided suggestions for improvement, for example.

Design promotion

To raise the awareness of design both in everyday life and in the development processes of companies, we coordinated the Lahti Design Week in 2019. This consisted of seminars and talks on design aspects, such as digital clothing in computer games, digital games in city development, wood architecture, and museums' new and active roles in cities. Furthermore, the Design Week had altogether 20 exhibitions of various results of design in furniture for temporary housing and emergency accommodation, informa-

Picture 2. Workshops have been used to give hands-on training. In this case, digital media creator Vitali Gusatinsky and software developer Johan Ruokangas from Fraktio put the participants to work to see how design sprints could be used in rapid mobile application design and user interface design in February 2020. See more about design sprints in e.g. Knapp et al. (2016) (Photo: Tommi Mustaniemi).



tion design for city statistics, the history of sports clothing, vehicle design, and photography, for example (see Picture 3).

The Design Venture Day, as a part of the Design Week, addressed special questions and issues that enterprises typically have. They were given guidance in design, marketing, and legal clinics (see Picture 4).

The Design on the Road events began in 2019. Their purpose is to address companies, governmental organisations, and the

third sector outside the Lahti area in proceeding with design in their development processes (see Picture 5). One event was an exhibition of young designers from the Institute of Design at the Habitare expo in 2019, which is Finland's largest furniture, design, and decoration event. The young designers were honoured for the rapid production of inexpensive toilets for crisis areas, and 3D printable furniture (see Picture 6).

Picture 3. Lahti Design Week 2019 displayed 20 different exhibitions, one of which presented clothing design for two virtual environments by theatre and performance costume artist Heli Salomaa. She has specialised in digital costume design. One design of hers was for 'Mirages' which is a dance and music film and live show based on music composed by Kaija Saariaho, and the show combined live performers and virtual scenography. The other costume design displayed was for the award winning 'Control' action adventure video game by Remedy Entertainment (Photos and collage: Tommi Mustaniemi).





Picture 4. The Design Venture Day in May 2019 offered shows and events for SMEs at the LAB University of Applied Sciences' campus. The participants of the Design Venture Programme had a free stand at the event, e.g. Kahiwa Coffee Roasters (below left), TopLine Media (top right), and A. Vesalainen (below right). Enterprises were also offered free clinics on business development, as well as the university's services for enterprises, legal issues, marketing, and design. The visual identity by Elisa Mäenpää, a student at the Institute of Design and Fine Arts, originally designed for the Design Venture Programme, was widely put to use in the event (Photos and collage: Tommi Mustaniemi).



Picture 5. The purpose of the Design on the Road events was to address companies, governmental organisations, and the third sector outside the Lahti area in proceeding with design in their development processes. This particular event was held in Lappeenranta, in south-eastern Finland, in November 2019. Project manager Veli-Pekka Rätty stressed that despite the rapid changes in e.g. technology and the environment, peoples' experiences, dreams, desires, feelings, values, and stories remain basically the same or change rather slowly. These human-related activities are known and are addressed by designers. Hence, designers and experts in product and service design, usability, interaction design, and visual and other sensory design are indispensable in multidisciplinary product, service and communication tasks. Professionals design products for improved customer satisfaction and usability, and ultimately create profits for the company (Photo: Tommi Mustaniemi).



Picture 6. One Design on the Road event was an exhibition of young designers from the Institute of Design and Fine Arts at the Habitare expo in Helsinki in September 2019. Habitare is Finland's largest furniture, design, and decoration event.

The young designers from the Institute of Design and Fine Arts, Tiia Jokinen and Sara Auvinen, were honoured by Alberto Alessi for the 'Rehome Toilet', rapid production of inexpensive toilets for crisis areas. Alarik Saarinen was honoured for 3D printable furniture.

'My Kindergarten' highlighted results from developing kindergartens which are more motivating for play and exercise. 'The Crush!' displayed studies of furniture structures and toughness. With quite loud blasts at times. The exhibition itself was designed by numerous students from the Institute of Design and Fine Arts.

The Design Venture Programme united the stand to show business skills acquired by young designers: to understand customer needs, the behaviour of materials, as well as the special requirements of international business (Photo: Sergei Pavlov).

Business improvements

Awareness of the role and importance of design has certainly improved during the Design Venture Programme. The companies that we have been coaching are more design-aware and mature than before. For example, they have produced their own marketing videos with their own tone of voice. They are aware of state-of-the-art electronic commerce strategies and implementations. They are ready to act using their social media channels and reach their current customers

and prospects. Additionally, they have found new business partners from other companies in the programme. All coaching within the programme has advanced their businesses. Design means business.

Acknowledgement

The Design Venture Programme project has received funding from the European Regional Development Fund (ERDF) programme.



Picture 7. Awareness of the role and importance of design has certainly improved, and companies that we have been coaching during the Design Venture Programme are more design-aware and mature than before. One example of this are the results of a video workshop in February and March 2019 where participating companies produced their own marketing videos with their own tone of voice. Internationally renowned master goldsmith Eero Hintsanen explains visual branding he has produced himself (Photo: Veli-Pekka Rätty).

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Anna Palokangas, Kati Kumpulainen

The City as a Service

Summary

As in business, so it is between cities: the most attractive one is no longer the one that has the best product but the one that provides the best overall offering.

The strategic goal of the city of Lahti is to be a business-friendly city. Lahti wants to attract new businesses and nourish the ones already here, but at the same time, Lahti is competing over prosperous businesses with other southern areas of Finland. Therefore, Lahti is taking action to develop their services to be more efficient and smoother. Lahti wants to provide a better customer experience.

The objectives of the project The City as a Service are to develop and pilot the city services together with businesses by using design methods so that services become more user driven. The aim is also to design co-creation models for service development between the public sector, private sector and innovation universities. The project will improve the understanding and capabilities of the city of Lahti employees regarding customer service processes. In the project, the development especially focuses on the geography and event organising permit processes.

As a result, 'Lahti at your service' service models are ready and there will be practical examples of service design used in improving the services of a more business-friendly Design City Lahti. Service models will also be scalable to other services in the city in the future.

This paper discusses the advantages of service design for the service development of the public sector and presents the City as a Service project.

Keywords: service design, user-driven product and service development, SMEs, enterprises, public sector, city of Lahti

The benefits of service design in developing public sector services

The service design process starts by investigating the needs and values of a customer. Understanding these factors helps the design team or service developer to focus on the right problem. In the process, fast exper-

iments and prototyping test possible solutions quickly and cheaply. Costs are reduced by not using resources for touchpoints or services for which there is no demand. Prototypes evolve into pilots and then into implemented new services. Public services, both for citizens and for businesses, benefit from

service design because it helps organisations and companies to be truly user-driven (Kumpulainen 2019).

Using service design methods to develop the municipal services with public servants and citizens has clear benefits. The user-centric approach helps develop the services with a focus on both the people who are using the services and the people that are delivering the services, and adjusting the service in the overall picture of the municipal services (Monteith 2019).

When citizens are able to be involved in developing services for themselves, they are more likely to get their needs considered and, from their point of view, get the right problems tackled. Co-designing service processes gives public servants a stronger ownership of the service, and possible changes in the daily routines do not feel so intimidating when these are developed together. Both parties can feel more empowered in regard to these matters instead of feeling led by public regulations and processes (IDEO 2016). Engaging staff in a client-centric approach teaches employees the value of user-centricity and helps them to understand users' values and expectations (Monteith 2019).

Secondly, the public sector is increasingly suffering from systemic challenges. The ageing of the population, the marginality of young people and economic instability are only some of the challenges that must also be taken into account locally. Local governance is running low on funds and cutting budgets time after time can no longer be the only solution – one needs to look for new solutions. Service design and its methods have proved to be an excellent way to find

solutions to large and complex problems. Digging for root causes, engaging stakeholders and iterative development will support the public services and organisations in taking the steps towards client-centricity and a more effective way of delivering the services (IDEO 2016).

Developing services together with businesses in the city of Lahti

Lahti is a city of 120 000 residents and the centre for a region of 200 000 people. Lahti is well located in Southern Finland, 100 kilometres north from Helsinki, at the junction of highways and railways to Northern Finland, the west coast and, to the east, to Russia. Lahti also has good properties and infrastructure for new businesses. There are enough people for companies to have a workforce and the recent arrival of Lappeenranta University provides highly educated local professionals.

The vision of the city of Lahti is that it is internationally successful as a bold environmental city for people and businesses. Lahti is an interesting centre of industrial design, offering a meeting place for companies, designers and education in design. Close co-operation between industry and education has had the affect that many local companies are renowned for their skills in industrial design (City of Lahti 2020). Lahti is also a great venue in which to arrange different kinds of events. Lahti is internationally renowned, especially for the Lahti Ski Games / Nordic World Ski Championships.

Lahti wants to attract new businesses and nourish the ones already here. The aim of the project The City as a Service is to develop

and pilot more user-driven and fluent city services together with businesses in order for Lahti to become a more business-friendly city for existing companies and more attractive for new businesses. The results of a survey carried out by the city on companies are the background to the project. The project focuses especially on services which relate to geography, and event organising permits and processes.

Depending from the character of an event,

almost 30 different permits must be applied for before the event. Permits are required, for example, for using the area for the event and for temporary building and transport arrangements. The coronavirus pandemic has affected the security of the events so it now has an even more important role in event organising.

Not all of the permits are applied for from city public officers; for example, some of them have to be applied for from the police.



Picture 1. Services are developed together with businesses by using design methods so that services become more user-driven. (Illustration: The City as a Service. Mervi Puustinen 2020)

Permits which relate to business location and geography are also numerous, for example, construction permits, environmental permits and land use permits. Depending on the size of the project, the demand of the permits varies and it is not easy to visualise the service blueprint or customer journey map in order to cover an average process. From the customer point of view, the first touchpoint for applying for permits is, in most cases, the web page of the city as most of the permits are applied for via digital services.

Research and defining the problem

Over 50 entrepreneurs, operators, stakeholders, city of Lahti public officers and public officers from other cities were interviewed. The interviews were individual and conducted in partly structural form, either face to face, over the phone or via Microsoft Teams. The outcomes were analysed in project teams, one with a focus on geography and one with a focus on event organising permit processes, and visualised for later use.

The findings were that the most important areas for improvement were information sharing, customer service and permit processes. The information needed in the permit process is fragmented across many platforms, and finding the right contact person for a new client was challenging. Communication and information flow between the different phases and stakeholders of the process was found to be challenging, and its fluency and activity varied considerably. The quality of customer service also varied between officials, and the need for user-driven guidance material emerged to support transactions. The lack of systematic

collection and the utilisation of customer feedback was also noted. In permit processing, inter-system conversations, processing transparency and increasing user-orientation in procedures were identified as needs.

Along with the interviews, the team did research by benchmarking. In this case, the quality of information and the service provided for event organising and for establishing business facilities were compared. Benchmarking was made from services in other cities and also in the private sector. Good practices were analysed not only from Finland but also internationally. The result of the research highlighted the importance of clear websites with simple paths and understandable content. It is highly important how the process of applying for permits is guided and how information is visualised. Making it easy to find all the essential information from one place and making the customer welcome through a digital channel, the web page, were valued. Good practices were, for example, visualising processes with simple timelines or providing clear forms and practical guides to support the customer in the process.

Concepts and co-creation

Based on the results of the interviews and benchmarking, the main areas for development were identified and several concepts were designed.

A service concept can be described in different ways, but the main idea is that the concept relates to both the customer's and organisation's points of view. The concept should include the aims of the service and a plan for how service would be delivered.

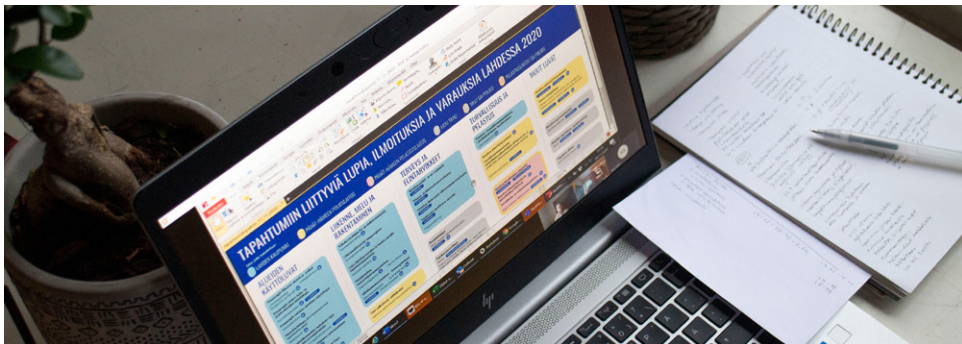
From the customer's point of view, the service can be seen as one service, though it might be a sum of different services and different actors, and this should be taken note of when designing concepts (Goldstein et al. 2002, 122).

The first concepts of the project The City as a Service concerned service processes, the visualisation of information and guidance for processes. The concepts considered both the digital and non-digital environment of the services.

Visualisation had a key role in many concepts. The lack of simple but informative visuals of the services was partly causing uncertainty and delays in processes. Visual timelines were one of the concepts for handling this issue. Also, there were some aspects that were not visible to the customer for no particular reason, but were found to be essential when developing understanding between the customer and city services.

The teamwork the city public officers are doing, especially in relation to land use and construction permits, was one of the cases that was brought to our attention and was addressed in one of the concepts.

The concepts were presented for city public officers and some entrepreneurs in the co-design workshops. Co-design means mutual learning between users and designers. During a co-design process, all stakeholders increase their knowledge and understanding. One of the most important tasks of co-design is creating inclusive activities for boosting the participation of any citizen involved. The benefits of co-design are that it will increase the motivation and commitment of everyone who participates as different stakeholders can gain greater responsibility for various stages of a project development process. It will also increase opportunities for discussion and reflection with different stakeholders (Co-create 2019,



Picture 2. Visual co-design platforms enable ideas and working together remotely. (Photo: Enna Eloranta 2020)

8–10).

Due to the escalation of the coronavirus pandemic in March 2020, all the workshops were transformed into a digital form and were organised virtually. The whole situation was new to everybody. Some of the on-line tools were known or they were a little familiar – for example, on-line meeting tools – but actual digital workshop tools and a remote workshop in general were new areas for all parties. The challenging situation was quickly taken as a learning process and a lot was learned on planning and facilitating the remote co-design workshops and remote project work.

The project teams each prepared their own workshop to which officials and interviewed entrepreneurs and other participants

were invited to take part in the sector in question. The aim of both workshops was to present the findings and concepts made on the basis thereof and to further develop concepts together with the participants.

As has been said, working in remote workshops brought new issues to tackle and mastering the technology took time. But in spite of the challenges, both subjects (event services and geography permits) were successfully discussed and a total of 15 further developed concepts were produced. Some of these concepts were more complex entities and some were smaller, simpler, and easy to take action on. Thus, twelve concepts in total were selected for the continuation of the next round.

Nettisivujen ja viestinnän kehittäminen

3 Kehitetään sijoittumisen ja rakentamisen osioita nettisivulla käyttäjystävällisemmäksi, sekä lisätään läpinäkyvyyttä ja positiivista viestintää seuraavin keinoin;

- Miksi sijoittua Lahteen- myyntipuhe
- Prosessien kuvaus
- Avainhenkilöiden esittelyt
- Vapaat yritystontit ja niiden tarkat tiedot
- Ajanvarausjärjestelmä
- Lupien keskimääräiset käsittelyajat
- Nostetaan esiin onnistumisia

#NäeTulevaisuutesiLahti

Miksi sijoittua Lahteen?

Avainhenkilöiden esittelyt ja yhteystiedot

Katso ohjevideo!

1. Määritellään palvelus
2. Valitaan, missä palvelus toteutetaan
3. Määritellään kuka vastaa palvelusta
4. Keskustellaan palveluksen toteutusta

Siirry e-asiointiin

Picture 3. The concepts were co-created in on-line workshops. They were related to service processes, the visualisation of information and guidance for processes. (Illustration: The City as a Service student team 2020)

Experiments

During the summer and autumn of 2020, the chosen concepts were developed further and tested with the end users and officials involved, which means the project was taken on to the experiment phase. The goal of experimenting in a development process is to create new, innovative products, services or businesses or to develop organisational practices.

It is the nature of experiments that every experiment that succeeds requires several that do not. Early failures, however, allow developers to quickly eliminate unfavourable options and refocus their efforts on more-promising alternatives (Thomke 2020).

Experimentation requires going where people are, creating customer contact and testing unfinished ideas in practice. The purpose of the experiments is to generate new information about the idea being developed and to reduce the uncertainty associated with it. It is important to produce new information quickly and cost-effectively, and also to react quickly based on the learnings. Experimenting helps in deeply understanding the client and solving his or her real problems, and therefore, better and longer-lasting customer relationships can be created (Hassi et al. 2015).

In this case the project team now focused on working closely with city public officers and reached out to the local companies in order to get the user point of view. It was not easy to reach businesses because of the COVID-19 pandemic. Cooperation with Lahti Region Development Company LADEC Ltd. was a pleasant addition when approaching the companies in order to get them share

their views on concepts.

At the same time as The City as a Service project, a major renewal project for the city of Lahti web pages took place. As many of the experiments were about the information provided on the web pages, the project needed to stretch the schedule of the experiments in order to fit the web page project timeline. The new city of Lahti web pages were launched in autumn 2020.

Another challenge for the experiments came from the progress of the second wave of the coronavirus pandemic. In order to prevent the progression of the disease, there could not be close contact situations, and therefore, the tests were planned to be carried out either at a secure distance or as a completely remote operation. There were good practices in both situations that were applied according to the resources available. A good example of this was the event for event organisers that was designed to be either a physical or hybrid event. Therefore, the possibilities for organising the event were more flexible, even when the epidemic created great uncertainty.

Land use services focused on improving the sharing of information and describing processes for customers in order to facilitate the exchange of information and, at the same time, to facilitate the work of officials. Based on concepts and city communication guidelines, informative visual content was developed for the city's new website.

The event services were visualised by different permits and licensors on one sheet instead of on the old Excel table. Illustrative material was built for the city's staff which could easily be used in customer services

and also possibly be taken to new websites.

A big opportunity was to start cooperation with the Ministry of Economic Affairs and Employment. They are responsible for the project 'Licensing and supervision', which aims to reform practices related to licensing and supervision by harnessing the benefits of digitalisation. The objective is to develop practices in a client-oriented way and identify licensing and supervision packages that meet clients' needs. Another goal is to integrate the service and handling processes in a client-oriented way across organisational and administrative boundaries (Ministry of Economic Affairs and Employment in Finland 2020). They are building a national digital service platform which makes the license applying process easier and faster from both the client's and authority's perspective. The event management department of the city of Lahti is interested to start piloting the digital platform.

A successful experiment generates ideas for implementation that are practical lessons in how the piloting or final solution should be implemented and what should not be done. Piloting contains an assumption of success – no one is going to make a pilot when they are almost certain it will not work (Hassi et al. 2015).

By the end of the year 2020, three to five tested concepts will be selected, and these will be worked on for a piloting phase that will take place in spring 2021. The experiences and feedback will be collected from all parties involved during and after piloting. The information is going to be analysed so that the city of Lahti can develop and produce business services based on that information.

The bigger picture

Design co-creation models for service development between the public sector, private sector and innovation universities is in everybody's interests. The construction of smooth cooperation is known to contribute to the success of the various parties involved and also known to contribute to developing the vitality of the entire area of operation. It can be said that in the project The City as a Service, the starting position corresponds to the triple helix model, which has been widely examined in the context of innovation and the knowledge-based economy. The model describes dynamic interactions between the government, industry and universities, fostering innovations, entrepreneurship and economic growth (Leydesdorff 2012, 3–4).

In this project, we don't want the model of co-creation to be mere rhetoric but rather want to build practical and effective practices that can be scaled up to cover organisations and services more extensively than in this project if necessary.

An important part of the smooth cooperation is a shared knowledge and understanding of roles, objectives and practices. This project has shown the need to deepen knowledge in understanding customer experience and co-development skills. The project therefore aims to increase the expertise of the parties through education. It has also been noted that the education sector and the public sector may face challenges in connecting directly with companies (i.e. the private sector). For this reason, the involvement of entities close to companies, such as regional development companies and entrepreneurial associations, is a valua-

ble addition to developing cooperation with the private sector. The use of service design when developing public services is proven to be effective.

At the end of the project there will be practical examples of the service design used in

improving the services of a business-friendlier city of Lahti. As a result, 'Lahti at your service' service models will be ready and will also be scalable to other services in the city in the future.

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Annariina Ruokamo & Oona Casalegno

Design tools for circular product design

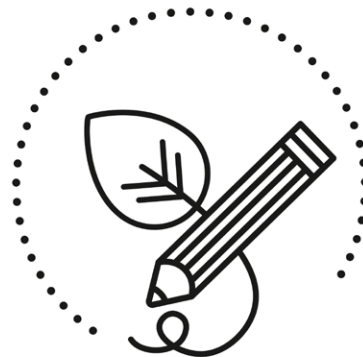
Summary

There is a variety of design tools available for guiding the designer's work in accordance with the principles of circular design. Tools like this guide the designer through the product design process phase by phase. They diversify the reflection done during the design process and extend the thinking to more clearly include different points of view from production to consumption, through maintenance and further processing of the product, all the way to the end of the product's actual life cycle. Circular design is a complex entity, and breaking it down into parts with the help of various tools enriches the design process.

Key words: Circular economy, circular product design, designer's guide, circular design guide

Illustrations: Iida-Maria Remes

Circular design takes into account the entire life cycle of products from raw materials to production, processes, manufacturing, distribution, logistics, sales, use and recycling, not forgetting service either. According to Ethica, designers can use different circular planning strategies, which can be divided into five categories: longevity; maintainability and repairability; compatibility, including modularity; upgradeability; and easy recyclability, including easy separation into components or materials (Ethica 2019 & Ethica 2020).





The designer must understand the principles of different circular economy business models, as they guide the designer's work and help in decision-making. Such business models include:

1. **Extending the product lifecycle** means that the product is designed to have as long life as possible and to be easy to service, repair, refurbish and upgrade. It extends the product's life cycle if it can be remanufactured, reused, used jointly or shared with others. The purpose of design is a product or service that can be used as long as it makes technical and economic sense. It is worth noting that this will also reduce the need for new products.
2. **A product as a service** means turning physical products into services or combinations of products and services. The traditional role of a product designer is transformed into the role of a service designer. The customers no longer purchase and own the product or service but leases or rents it or a part of it they need.
3. **Sharing platforms** refer to enabling the sharing of unused resources to those who need them. Products can be transferred from one user to another without payment, for example, through a leasing, exchange or rental service. Common sharing platforms are used for enabling the use, access to or ownership of products
4. **Renewability** means the use of renewable, recyclable and biodegradable sources of energy instead of fossil energy sources in the design phase or manufacturing of the product, and the aim to use as pure materials as possible in the products. In this model, the designer's choice of materials plays a key role. The goal is to restore and reuse all materials and energy.
5. **Resource efficiency & recycling** means that no material is disposed of, but that all unused material is recycled as raw materials. Technological development has made it possible for resource efficiency to actually increase in a value chain, process or product, which may lead to more efficient recycling. Waste and production side streams provide raw materials for recycled products and materials. The designer plans the products so that different materials and parts can be easily separated from each other. (Accenture, 2014, Ovaska et al., 2016, Sitra 2018 & Seppälä et al., 2016.)

The traditional linear operating models and design guidelines based on continuous growth support growing consumption. They place people above everything and see the world around us as a source of endless gratification. In the linear model, the product or service is at the centre of design, and constant efforts are made to make them even more cost-efficient, with an aim to produce more, faster and cheaper. Such linear thinking is not suited for design in accordance with the circular economy.

Circular design is a comprehensive, complex and systemic process in which the designer has more power and responsibility to influence the entire process than in the linear model. Circular design means that products and services are designed in an optimal and appropriate manner by minimising the negative and maximising the positive impacts throughout their life cycle (Ovaska et al., 2016). The products are designed so that all resources circulate, and the value embedded in materials is preserved as long as possible in society (McDonough & Braungart 2002). The purpose of this is to minimise the burden to the environment. In the circular economy business model, the consumption of products and services focuses on sharing, renting and recycling instead of ownership (Sjöstedt, 2019).



In circular design, the designer's substance competence is no longer enough. It also requires system competence, that is comprehensive perception and understanding of the design context and circular economy. Indeed, a number of different schools have emerged within the circular economy that look at the circular economy from different viewpoints or different sectors.

The design phase of a product or service plays a significant role in the implementation of circular economy operating models. Already in the design phase, decisions are made on such matters as the useful life of the product or service, optimisation of the use of materials, recyclability and energy efficiency. However, for the designer to be able to act in accordance with the principles of the circular economy, the whole company must be committed to it, and the entire operating environment must support it. In other words, the company's circular economy business models and strategies support the design work, but do not necessarily provide concrete tools for the actual design work.



Different tools and guides for understanding the circular economy and circular design already exist. These have been reviewed in the Longer Life and Recyclability by Circular Design project of the LAB Institute of Design and Fine Arts.. The review revealed that the guidelines can be roughly divided into four categories: upper level systemic and strategic tools; comprehensive general circular economy guidelines, instructions and methods; guidelines and tools focusing on specific areas; and co-design tools.

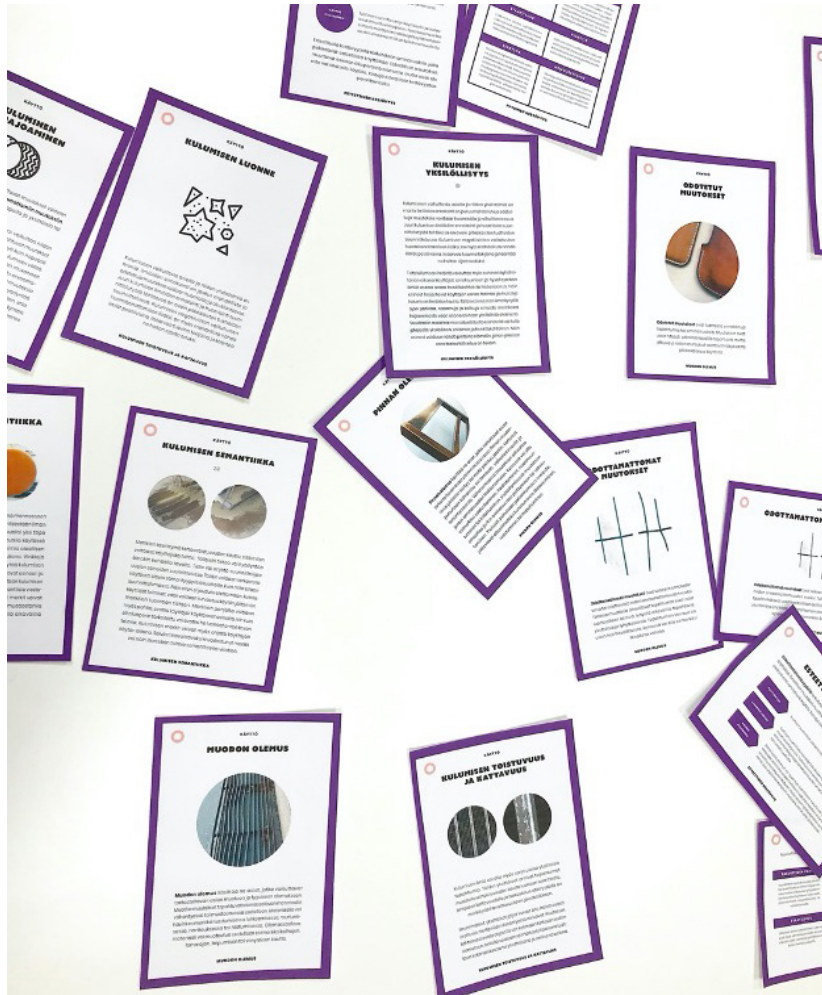
1. **Upper level systemic and strategic tools** provide the designer with very little practical help for actual product design solutions but serve as guiding elements in the background and provide guidelines for how to work. They include business models and strategies supporting the circular economy. Many companies already have their own business model – or even more than one model – that supports the circular economy.
2. **Comprehensive general circular economy guidelines, instructions and methods** are the most extensive tools available

to the designer. Companies where the designers operate can follow a specific known method or a method tailored for the company. Many of these methods are extensive and complex and work best when the entire operating environment uses a specific method or has developed its own method.

3. **Guidelines and tools focusing on a specific area of the circular economy** are the most practical in the everyday work of a product designer. Companies may have their own design guidelines and tools, such as computer software and browser-based tools, to help the designer make decisions in accordance with the principles of the circular economy. There are also different impact indicators and measurement tools that can help designers in their decision-making. The most practical product design guidelines and tools are company-, industry- and material-specific. Even though the tools in this category may provide practical help, their use may also be problematic for the designer. Evaluations made using different tools or methods may give different results, and it may be difficult for the designer to make decisions based on them. For example, if the product design project focuses on reducing CO₂ emissions, water consumption may still increase. Life cycle analyses of products and services made by different organisations may also give different results, which makes decision-making more difficult.

4. Co-design tools provide help for thinking, brainstorming and envisioning, especially in workshops and when designing is done in teams. These methods can be used as assistance in different phases of the product development process, from strategic planning to conceptualisation in the early stages of the process, as well as in the iteration phases of the process. Circular economy tools focusing on co-design can be an excellent help in the formation of a common language and operating methods for multidisciplinary teams, especially when the understanding of the circular economy, design thinking and product development processes are not among the strongest competence areas of those involved in the team design and decision-making.

The Longer Life and Recyclability by Circular Design project is developing a designer's guidebook, the main principle of which is built around the product life cycle model. The main focus of the guidebook is on providing the designer with an understanding of the downstream stages of the product's life cycle through use, reuse and recycling. *The Longer Life and Recyclability by Circular Design Designer's Guidebook* not only offers designers strategic tools to support the design process but also introduces end-of-life processes so that, using the guidebook, they can take these into account already during the design process. Circular product planning and design can also be applied for laying foundations for new business models in which the details taken into account in the product design steer business activities from linear "Take - Make - Waste" thinking towards sustainability and the circular economy. In its first phase, the purpose of the guidebook is to serve as a training tool, but also to later serve as a guidebook that professional designers carry with them.



Picture. Longer Life and Recyclability by Circular Design – The first prototype of the designer's guidebook. It was decided that the guidebook will be published in card format to increase its usability: the cards function as a good tool, for example, in workshops and as part of teaching. The graphic design and layout of the guidebook was made by Iida-Maria Remes. Photographer: Annariina Ruokamo

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Mirja Kälviäinen

Food Service Design for Sustainability

Summary

The Integration of Fibre-based Packaging Solutions for the Needs of SME's project has developed environmentally sustainable packaging materials and design solutions. In the context of packaging, the project was also interested in packaging-related services linked to sustainable food consumption. A course on design for sustainable behavior change tackled this challenge through service design using various behaviour change tools. The students designed sustainable food consumption solutions covering the broad area of food consumption with examples such as purchasing more untreated and local vegetables to preventing or reallocating food waste. The touchpoints were designed in detail utilising social-cultural influence factors as well as intervention and interaction-based behaviour change tools to ensure the hoped-for behaviour. Customer journeys were built to inform, persuade, and support consumers to make selected food consumption changes through social, habit-based, identity-related, emotional, and tangibility-based promotion. The service processes included a look at the capabilities, motivations, and opportunities for the selected user group. The service projects discussed only at the end, whether the designed sustainable change would also require changes in the packaging solutions. This kind of process follows the idea of starting from strong systems and service process-based sustainable solutions instead of supporting old unsustainable systems and designing only one product inside them to be sustainable.

Keywords: sustainable food consumption, user research, design heuristics, behavioural psychology, behaviour change

The food consumption change challenges

The environmental impact from our excess consumption habits in Western countries amounts to around 70% of all carbon dioxide emissions. There is an abundance of information available on how households

can reduce the environmental impacts related to their consumption in the areas of housing, energy, water use, mobility, food, material products, and services through anti-consumption measures or changes in consumption (Claudelin et al.2017, 958; White et al. 2019). Despite the available low impact

action advice, there has not been a significant shift towards more sustainable consumption practices even though negative impacts and increased risks to nature and humans due to climate change and loss of biodiversity are well-known (Rockström et al. 2009, 461; Steffen et al. 2015, 623). Maintaining biodiversity and preserving forests are especially connected to reducing meat consumption and turning more to consuming plant-based foods. Consumption studies constantly report an attitude-behaviour gap between the positive attitudes towards environmental protection and the real consumption decisions and behaviours consumers exhibit. The found attitude-behaviour gap includes barriers to action and a lack of drivers for sustainable behaviour in our current everyday settings (White & Habib 2018, 9).

A sustainable change in food consumption can be achieved through several means. One important change is to consume food in a less wasteful manner. We should not throw away still edible food ingredients since this is the most unnecessary part of the environmental impact that our food consumption has. The change to low carbon food ingredients includes less meat and dairy and more of the vegetarian choices. Local, seasonal food has positive impacts on reducing transportation costs and agricultural impact. Less packaging or packaging made of low carbon material is only one of the means to reduce the environmental impact of food consumption (Salo & Nissinen 2017, 18-19). Packaging, however, also plays a vital role as a means to keep food edible during the transportation and onwards to the consumer use stages.

In addition to packaging material devel-

opment and packaging design the Integration of Fibre-based Packaging Solutions for the Needs of SME's project had the wider task of examining food consumption and considering the services around sustainable food consumption. A MA level design course at the LAB University of Applied Sciences on design for sustainable behaviour change tackled this challenge provided by the project. The adult students represented various professional fields including design, media, architecture and engineering. The course focused on service design for diverse challenges related to changes in food consumption that the students analysed as important. Service processes were created through user research and by applying various tools for encouraging behaviour change. Most of the service projects discussed only at the end, whether the designed sustainable change would also require changes in the packaging solutions. This article examines the outcomes of the course, especially focusing on the results of a series of analyses carried out by the course participants and then some related design solutions.

In the analyses by Doordan (2013, 60) and Chick and Micklethwaite (2011, 118-137), the design based pursuit for user-driven environmental sustainability can happen by enhancing the performance of existing systems, mostly products and related behaviour, or by co-creating sustainable lifestyle solutions with various stakeholders. The last approach especially embraces the complex possibilities of products as a service, service systems, and other saving, waste management, or dematerialization-directed solutions.

The targets for food consumption change

The target behaviours and related services to design during the sustainable design course were chosen through a process of looking at the societal trends, stakeholder mapping, and user research. Ideation on the focus for sustainable behaviour change development linked to environmentally sustainable food consumption considered the different stages of food consumption: acquiring, shopping, cooking, eating, and the waste produced.

A **PESTEL (Political, Economical, Social, Technological, Environmental, Legal) analysis** was used as the basis for a future orientated trend analysis. This was to ensure, that diverse trends would be taken into account in the solutions. Interesting points of view on the possibilities for encouraging changes in food consumption, in order of importance, included the following:

Societal trends are of course vital for consumption change. The points of interest in terms of food consumption included the demographic change towards increasing numbers of small and single families, and the age division with increasing numbers of elderly people in many Western countries. Furthermore, healthy lifestyle aspirations, cultural traditions of food shopping and food content, enthusiasm for culinary experiences and new recipes, as well as social media as a distributor of ideas in current consumption culture were seen as points of interest.

Environmental trends are also highly relevant in relation to changing people's consumption patterns. This area included insights into aspects that need to be changed including food and plastic waste

and demands for finding protein sources with lower environmental impacts than especially red meat. Nature preservation through the use of more plant-based food sources, as well as the clean agricultural production of food were also considered important. Additionally, the study revealed requirements for fewer emissions due to transporting food unnecessarily.

Technological trends included providing new channels of information distribution and interaction via social media technology, sensors, and AI-based solutions that can alert people and help to supervise the condition of food and food purchasing habits, as well as data-analytics that could be used to generate personalized data.

Economic trends at a high level pointed to the necessity of moving towards the circular economy, with implications for production, distribution, and waste management systems. Some of the other interest points included pre-made service packages as solutions for busy consumers, providing new work through delivery systems, and the importance of healthy food consumption due to the costs of healthcare.

Political and legal trends included all the possible support, supervision, and restrictions related to food production, distribution, and waste management. One important issue was the importance and support for local, clean food production also in the sense of crisis insurance.

Based on the points of interest revealed above, various challenges were selected by the course participants. These change related challenges covered examples from various food consumption process stages

either from the beginning of the process such as growing your own bugs for protein to purchasing more of untreated and local vegetables, or were related to the end of the process such as preventing or reallocating food waste. The finally selected change challenges also included combining the idea of sustainable and healthy choices and to inform people about them, inviting people to use low impact lunch choices, vegetable food shopping from dangerous market places in Peru during the COVID19 crisis, applications on mobile devices and packaging that quickly show whether a food product is a low carbon one, a ready-made meal, or a sustainable meal ingredient kit from the local supermarket, reducing the environmental impact of heavy industrialized food products in small packages and changing shopping behaviour to reduce bag use in the vegetable and fruit departments of grocery stores.

Once the initial target areas for change were identified, the work continued with stakeholder and context mapping and analysis. The stakeholder mapping was a way to describe the customers, producers, and other actors interacting around the food businesses and services in the focus area of each change challenge. This was also combined with a context map describing the choice or use situation. The real service situation and possible networks around it were considered in order to identify the needed organizations and physical environments and to recognize possibilities, limitations, and risks related to the design challenge.

The work continued further by defining interesting user groups around the targeted food consumption change area. User seg-

ments and groups were considered in order to conduct user research, bearing in mind that demographic divisions can be a poor indicator for a motivational segment. The students interviewed at least one person who belonged to each defined interesting user group. The aim was to collect user stories relating to the target food consumption activities and contexts, user capabilities, motivations, and the related opportunities. The research also included netnography-type studies based on food discussions on social media.

Motivational and emotional user groups were of interest especially to the students. A good example were people who had some challenges or who experienced pain points, such as parents, who are responsible for feeding and educating their kids about what to eat and suffer from confusion and difficulties to decide what to buy from the grocery store. Another example were conscious consumers, who want to do and know more about how to reduce their environmental impact concerning their food shopping. The students applied a user persona description to gain insight for their developmental tasks. A user persona description means creating a fictional character representing a hypothesized user type with certain use contexts, attitudes, skills, and behaviour-sets for the purpose of customer journey creation. The purpose was to specify a user persona for inspirational development purposes based on the type of people who would be realistic, interesting, and important clients for the targeted sustainable solution.

Service processes for food consumption change

The user research-based claim for the design task was that a service process is required for the purpose of supporting consumers in sustainable behaviour change (Kälviäinen 2019). Behavioural change models in general argue that habit change requires a process type of solution with the incentive to start the process and suitable interaction touchpoints to support the change from old habits to adopt, learn, and habituate new ones (Tischner & Stebbing 2015). Sustainable solutions need to be presented to the consumer as a service process that blends smoothly into their everyday activities, where they may struggle with pressures and lack of time due to many other requirements. Interest points promoting the motivation to initiate the process are crucial. After stoking the interest of a consumer-user, the process should provide understandable information and moments of diverse activity with supportive touchpoints and necessary interactions throughout the hoped-for sustainable behaviour (Kälviäinen 2019). The service process serves as an umbrella for the service moments

and touchpoints where supportive factors are required to help the consumers towards the desired sustainable behaviour.

In the sustainable design course the service process was built through a customer journey to inform, persuade, and support consumers to make a selected food consumption change. The content of the change process was guided by using the social-cultural influence factors of the SHIFT framework, which is a meta-analysis from the marketing, psychology, and economics literature (White & Habib 2018). Guidance tools on how to change specific human behaviour also utilize findings from behavioural psychology. The user-research-based service process findings match well with the factors in the behavioural psychology COM-B model, as Figure 1 shows. The COM-B model describes how behaviour is dependent on the simultaneous influences of user capabilities, motivation, and contextual opportunity. The model is connected to a wide variety of intervention functions including education, training, persuasion, incentives, coercion, restriction, enablement, environmental restructuring and modelling (Michie et al. 2014). In the service

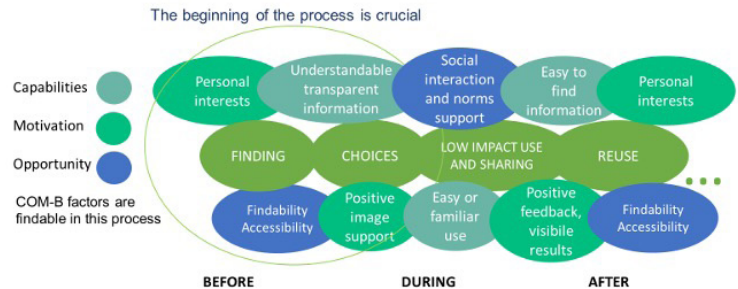


Figure 1. Service process for sustainable behaviour change consists of capability, motivational, and opportunity-related factors for behaviours to take place (Kälviäinen 2019)

process, where touchpoints drive the interaction process forward, the COM-B model provides advice as to what kinds of touchpoints could be constructed for different interaction purposes and for ensuring the necessary factors (capabilities, motivations, and opportunities) for the behaviour to occur.

In the behaviour change process there are similar process moments and touchpoints as in the service process, where the touchpoints drive the interaction process forward and

barriers or hindrances must be overcome. For a behaviour change intervention it is important to find especially suitable functions for the different stages of the behavioural change. As presented in Figure 2, some interventions would especially support the motivation and activity to start the behavioural change process, while some interventions would support the learning of the new behaviour, and others would help to carry on with the habit in the long run.

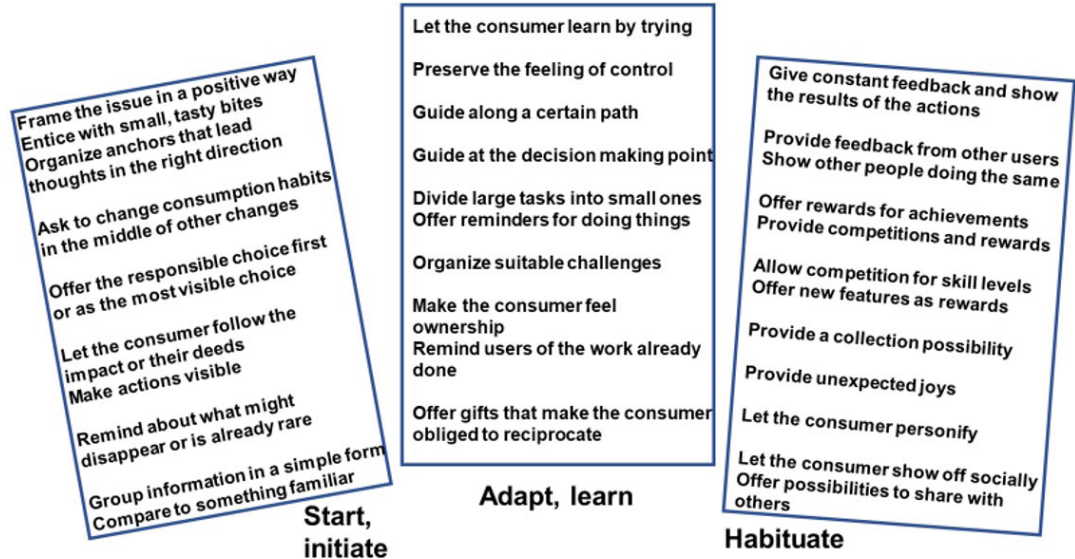


Figure 2. Examples of behavioural interventions suitable for the ideation of the different stages of the sustainable behavioural change process (Kälviäinen 2020).

Some examples of the food-based change systems show how these behaviour change models were used in the student's concept solutions. In one example, the bug protein case, the interest promoting phase included try out Crickets & Chips at a local food truck and a social influencer posing with cup of vegan yoghurt sprinkled with insect granola. Also a social media-based interest group was built around growing bugs yourself and the group provided hints for this. Selling the habit included the idea of the likeness to eating meat but having a good conscience. Also the idea of using bug-based protein was combined with protein for fitness and healthy lifestyle trends. The promotion of growing the bugs yourself made it not too expensive and the growing even provided satisfaction and a fun experience. When you grew the bugs yourself you could clearly know where they came from. You could also use your biowaste as food for the bugs. Growing your bugs yourself gave you the possibility to join the social media-based discussion groups to talk about the experiences of the hobby and the food you cook from bugs. Packaging solutions would not be necessary other than the kits for growing the bugs and the initial start-up populations of bugs.

Another solution looked at a support system to help weekly family food planners to add more healthy and sustainable groceries to their food basket including an easy way to plan the weekly shopping list and the recipes to guide the cooking from the suggested ingredients. The system supported choosing vegetables and less meat and gave new but still familiar food options. The support provided research-based facts and visualiza-

tions for ease of understanding. The system was an integrated meal planning and shopping list with suggestions of meals which can be changed or deleted. It provided an easy way to give the family data to health and sustainability calculations. Clear calculations supported good healthy and sustainable food choices. The possibility to modify the settings for family needs and favourites was available as the notion of eating "*our family food*" was found out to be important. There was a possibility to grade meals and ingredients ("*this was not good for us*", "*we want more of this*"). The possibility to favour Finnish products and to have Finnish flavours was provided since people considered Finnish food to be sustainable and healthy. The Viikon ruoka.fi (weekly meals) service was suggested to be a combination of already existing and accepted services, but it integrated health and sustainability advice and personalization possibilities. Packaging design would not play a big role as decisions would be made online. Packaging could be plain as there was no need to advertise or to be appealing since packages were not present in the decision making touchpoints. This could even lead to "virtual packaging" – stories and pictures online, with the packaging itself very plain and that way more ecological.

Concrete guidance for actions towards healthy lifestyles, balanced work life, and sustainable choices was also provided by a service looking at behaviour change in lunch choices. The initial phase for the consumer was to find restaurants offering sustainable food choices clearly in a local lunch places application. The service included training and materials for restaurants to help nudge

customers to make more sustainable choices since easy to find and easy to understand information about sustainable choices was essential in the busy and crowded lunch situation. For the restaurants, the concept suggested environmental restructuring. The service should help restaurants create or use eco-labels, highlight sustainable choices, and implement a visual hierarchy to promote ease of choice, as well as provide materials that restaurants can use to encourage customers to compete with each other, and materials that can be used to share information about sustainable consumer choices. On the result side the service should also advice of the behavioural nudges to promote sustainable choices such as: “we recommend”, “most popular”, “runs out quickly” and how to use quick and easy default choices as an advantage by placing them wisely in the menu. The restaurants could also be helped to show data to the customers on how many people eat in sustainable way and data about the food waste in the restaurant. The concept also sought to find ambassadors to report about lunch-related sustainable actions and experiences since people are too lazy and busy to seek and test out all the available solutions. The idea was to help both restaurant entrepreneurs and their customers to choose more eco-friendly options. In the restaurant information for the customer the idea was to help them to understand the impact of their choices by making sustainable choices clear and tangible, the sustainable habits and their results comparable, encouraging organizing competitive challenges between workplace groups, offering incentives with offer coupons and encourag-

ing and thanking with gifts for the sustainable choices made.

Packaging as a service solution

The important issue to note from service system-based development is that many of the solutions discard packaging altogether. Information on what to buy, and the decision-making support or marketing may be moved to other places or delivered by other means than from the supermarket shelf. However, marketing and motivating by different means concerning what to buy and use is still important. Different online and delivery-based systems could allow food stuff to be lightly or not at all packed. The durability of the delivery containers would mean re-use and an easy to return system as containers or other re-usable packaging could be returned at the delivery moment. If the consumer must remember to carry bags with them or other re-usable carrying devices for shopping, there is always a possibility that they forget this or that it is inconvenient in the middle of their everyday activities.

When actually shopping the information provided by the package is valuable. One suggestion was an application to support the sustainable consumer in making shopping choices with carbon footprint information embedded in barcodes or QR-codes also on the packages of food stuff. The consumer-user could scan the code and discover alternative foods with similar nutritional value. There are many misconceptions about the environmental impacts that different food ingredients have. Sometimes environmental impacts are not obvious, for

instance when the food stuff is transported from country where there is the harvest season going on. Also growing and producing a food product may have high impacts on the environment and the package may be important to protect it, so a well-packed product may be more sustainable than a product without a wrapping. On purchasing the ingredients for a recipe, the user would see the total carbon emissions or other environmental impact calculations from a calculating app and be able to compare different recipe choices to one another. In the system suggested after one month of using products with a lower carbon footprint than usual, the food store would give the customer an extra bonus.

Holistic solutions offered in the shop would look at the package with all the ingredients or even pre-prepared parts of the ingredients in the same package. This would require suitable package for the different recipe ingredients to keep for several days. These kinds of solutions mean lot of effort in the production and high amount of waste if the whole package remains unsold. For the consumer this is, however, an easy default solution.

One of the students' suggestions for behaviour change was a meal kit type of solution. The initial customer need was to decide what to eat the following week and buy groceries for this. These two things did not necessarily go in this order since many people create their shopping list by seeing what they find in the shop. At home some basic and traditional meals might come to mind. The consumer might decide to come up with the rest only in the store. In the

store the consumer picks up the premeditated and required food ingredients. Then they start to wander around the store pondering what else to buy. At the vegetable department they may run into a sustainable, pre-packaged meal-kit with recipes and dinner for two days. This was the suggestion made by the students on the course. The kit provides positive information to stimulate the customer's behaviour in the attached leaflet. The customer may decide to give it a try because the recipes look good and price is reasonable. They cook the meal the following week at home and the family eats it. The customer then decides to buy the meal kit again because it was so easy, and the food tasted good. Grocery store availability makes the product seem mainstream and socially acceptable, not only a "greenie thing". It is easily findable when shopping for other groceries and provides variation. It should have easily recyclable food packaging materials and e.g. vegetables without plastic wraps could be chosen for the meal-kit. The solution lures the consumer with the ease, getting them hooked with the taste and a good feeling easing environmental guilt. The visual and information solutions should make sure that the product appeals also to masculinity, makes the consumer feel efficient and that their actions have an impact by providing concrete, comparable, and understandable information on the sustainability impact of the used ingredients. The messaging should inform the consumers that they are doing something good for themselves and for their families not only to promote distant, big issues. The solution ensures meaningful and pleasant results as it is easy to get and

easy to use.

One of the packaging-related solutions examined the consumer aspects of excess plastic bag use. The possibility of reducing the quantity of plastic bags picked up at the fruit and vegetable department was tackled by designing different, durable, lifestyle bags to fit the transportation habits of different people (car, bicycle, walking). These durable shopping bags would be attached with small inside bags to use for small, separate items such as fruit. The personalization of long-term shopping equipment would make it desirable. It could also be part of overall home recycling systems and furniture but also just good looking and fun. The scales at the fruit and vegetable department could take into account the use of durable bags offering discounts if you use them. There would also be a refund system for the bags, and they would be available in the food store if you happen to have forgotten your own bag or need more.

Opportunities for changing the food consumptions system

Changes in the food consumption system are connected to the services that different already existing companies and organizations might provide. They may also require new kinds of companies and actors to provide missing parts that would support the required changes. One interesting starting point is using the possibilities of ordering from home and the growing use of e-commerce also for food. If sustainability information would be used efficiently in these kinds of solutions it would probably provide a calmer situation to contemplate sustainable

food options. The visual image of a package plays a role also in e-commerce, but digital environments offer many opportunities to inform the consumer of the food's environmental impacts and to nudge the consumer to purchase in more sustainable ways. However, solutions should also cover and be available in food shop environments. In these environments the packaging plays a vital role as a source of information, desirability and nudging the consumer in a sustainable direction.

It is also important to remember that we do not only eat at home and restaurants offering food during working or school days play a major role in food sustainability. One direction is to continue helping restaurants in creating low environmental impact food choices and marketing and informing customers about them in efficient ways that may lure consumer and nudge them into making more sustainable choices. In the packaging sense, disposable dishes and takeaway food containers are, of course, a possibility for sustainable re-design. However, greater environmental impacts can be made by changing the food ingredients and avoiding food waste in restaurant eating.

At the final end of the food consumption process, providing opportunities for sharing extra or leftover food is vital. Packaging plays a role in keeping even partly used ingredients still usable as long as possible for further use or for sharing with others. At the end part also the food packaging needs to be considered. Different systems for using returnable, durable containers or bags for food transportation and keep-safe could be further developed. Since food consumption

is a constant, everyday activity, these solutions cannot, however, be complicated or demand lot of transportation and constant carrying.

One opportunity is to use the food waste as food for something else as in the bug farming solution. Many other opportunities exist, but the most efficient would be the just in time type of analogies where no waste or even leftovers are produced since the con-

sumer has been able to purchase just the amount that she or he needs at the specific moment. Suitable nutrition containing powders and pills as food type of scenarios are the extreme end of this approach. Food is also something to enjoy, so hopefully other creative solutions exist to turn to sustainable food ingredients or reduce the food waste before introducing just pills.

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Figure 1. Service process for sustainable behavior change consists of capability, motivation and opportunity factors for behaviors to take place (Kälviäinen 2019).

Figure 2. Examples of behavioral interventions suitable for the ideation of the different stages of the sustainable behavioral change process (Kälviäinen 2020).

Noora Nylander

Packaging becomes savior in COVID-19 crisis

Summary

The whole world has faced a sudden new situation due to the COVID-19 pandemic. Actually, this black swan phenomenon will have major effect on our future. The black swan term is used as a metaphor for a sudden event. This is because in ancient times people did not believe that black swans exist. According to Taleb (2007) and Lustenberger (2020) however COVID-19 is not black swan, but more or less a white or grey swan, which are also events that have major effects but are more predictable or probable. In safety and hygiene, packaging provides protection for products. During the COVID-19 crisis new service solutions have emerged providing food delivery services. Entrepreneurs are coping with the crisis by being creative and packaging is an important device in this battle. The concept of packaging as a service means that packaging is not just “a box” but it can provide more potential to businesses if thought out on many levels. It provides material value; the protection, sustainable value; the right materials, business value; branding and awareness marketing, and emotional value; the experience of being safe and sound in society. This paper describes the phenomena of black swans, white swans, and grey rhinos in future forecasting and how they affect the packaging industry. It also shows examples of packaging as a service concept during COVID-19 pandemic. In hindsight it describes how the pandemic increased the importance of packaging services and guesses how the world of packaging might look afterwards.

Keywords: packaging, packaging design, black swan, white swan, megatrend, service design

Megatrends and the COVID-19 pandemic

The COVID-19 (coronavirus 19) pandemic started in December 2019 in China and very soon it had spread all over the world. In March 2020, the Finnish government ordered a lockdown closing many daily activities in society, for example the restaurant business.

According to Dufva (2020), a megatrend can be described as a general direction of the future which consists of several phenomena or processes of change. Examining changes and trends brings us the opportunity to assess the impacts of the actions taken in present and past. Megatrends provide useful tools to take a wider perspective of the future

and they can be narrowed down by looking into trends, weak signals and tensions that exist (Dufva 2020a).

Sitra (the Finnish Innovation Fund) presents a 2020 megatrend overview of the issues we should examine in the world. These are:

1. Ecological reconstruction as a matter of urgency
2. Strengthening relational power
3. The ageing population and its increasing diversity
4. The direction seeking economy
5. Omnipresent embedded technology (Solovjew-Wartiovaara, 2019)

Solovjew-Wartiovaara (2019) underlines that rather than understanding one megatrend or phenomenon it is more important to understand its relation to more extensive phenomena and also how it is linked to other trends. For instance, social changes and tensions also affect technological changes and vice versa.

Furthermore, Sitra (Solovjew-Wartiovaara, 2019) lists trends and questions that lie under the main megatrends for 2020:

- Centralized decision or broad engagement
- Power over the future
- Are solutions opportunities or threats?
- Change in work and consumption

All of these are affected by the COVID-19 crisis. Some changes might even be seen as positive and some future views may be threatened. For instance, one can see that the COVID-19 crisis has also led to some positive changes to consumption and the way we work. It makes people focus on the essentials. However, it threatens our freedom of decision and our power over the future, which is at the moment very unsure.

Megatrends provide one tool to help perceive the post-corona world and to identify places of choice. The corona crisis may accelerate some of the changes that already exist, but the things described by the megatrends have not suddenly disappeared. In addition, the corona crisis may highlight some new phenomena and developments.

Black swan, grey swan, or white swan?

The black swan term is used as a metaphor

for a sudden event. A black swan is an event that is not normally expected. It is rare and has potentially severe consequences. Is the COVID-19 a black, grey, or white swan? Nicholas Taleb, who is the inventor of the term black swan, has written that COVID-19 is merely a white swan. It differs from the black swan in the sense that a white swan is an event which is certain to occur at some point, like pandemics do since they are inevitable. Pandemics have happened throughout human history and actually Taleb and few other investors foresaw such an event in their scenarios. Taleb also describes grey swans, which are black swans that are expected to a certain degree, but which cannot be fully understood and touched. For instance, he names climate change as one of these. Due to COVID-19, the discussion about climate change has moved away from the main public debate, but after any natural disaster it will appear once again. Taleb also mentions positive and negative black swans. The positive black swans mean sudden events that have later positive effects on the way the future changes, for example the finding of penicillium (Lustenberger, 2020).

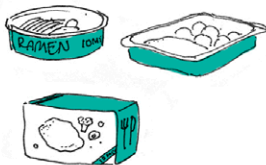
New business models for using packaging as a service

Megatrends and the resulting smaller phenomena affect the world of the packaging industry. The value of packaging as a significant part of corporate brand building has changed over the years. Sustainability and ecology have been an important driver in society for a long time. In the packaging sector, this affects the development of materials and technologies, but also consumer behavior

and what is required of corporate brands in the future. In addition, technological advances have given us many new opportunities. There are threats in the world and thus the need for secure products and services. Packaging has always been an important element at this point, protecting products and also the outer environment throughout their life cycle.

Packaging as service means that packaging is a tool to create an ecological system from various point of views. An ecological system is a holistic process in which all stages of packaging manufacturing and interaction are taken into account. An important part of the ecological system is also the consumer experience and how packaging affects, e.g. (food), and whether packaging plays a role in consumer actions. One role of packaging is to carry a brand voice, not just packaging as a tangible system. Is the sound of the brand ecologically and experience-wise believable and does the packaging carry this brand promise all the way to the consumer's home? As a company and a brand, it is important to think for yourself how to speak credibly about ecology. The message must not be universal, but must have its own way of speaking, which corresponds to its own values. The values, on the other hand, must be credible. Thus, as a concept, packaging is not just "a box" but it can provide more potential to businesses if it is thought out on many levels. It provides material value; protection, sustainable value; the right materials, business value; branding and awareness marketing as well being part of the service and emotional value; the experience of being safe and sound in society.

Ravintola-annokset
valmisruoka-tiskeillä



Juhlakassi



Kauppakuljetus



Take-away



Ruokakassi/ruokapaketti



Kotiinkuljetus



Figure 1. Illustration: Scenarios of services with packaging. From above and left to the right: Restaurant meals at a grocery store, a festival-menu box, grocery store transport, take away, food box, and home delivery from a restaurant (Khelli Palmgren).

During the pandemic, remote meetings and long-distance travel have had an effect on the experience of the digital environment. Instead replacing a physical meeting with a video or showing the highlights of a trip in a few videos, communities can start thinking whole new possibilities for actions. In this case, new technologies and services may also become more widespread (Dufva 2020b).

In addition to remote connections, the use of other digital services has increased. One can for example use online stores for grocery shopping and various home delivery services. People avoid touching devices, which increases the demand for mobile systems. For example, in Helsinki there has been growing demand for “collect and scan” and cashless services in stores. Additionally, food delivery services like Wolt and Foodora are doing well during COVID-19 (Dufva 2020b).

Technology has helped communities to keep in touch during the crisis, while restrictions have made companies and communities think in new ways and to create new services. Dufva (2020) lists a few points that raise hope in technology embedded into our everyday lives during COVID-19:

- Expansion of corporate responsibility
- Increasing communality
- Competence and resources for adopting technology
- New services

As seen, at the start of the pandemic the lack of knowledge, guidance, and information made it impossible for small retailers to develop evidence-based action plans. They used the support of the community to create new services and to cope with the crisis. Tuominen & Puhakainen (2020) have described some examples of the restaurant and grocery business:

Take away and home services replaced some parts of the income stream of restaurant business during COVID-19 lockdown in spring 2020. However, this was not enough and soon new retail channels also appeared as food stores took restaurant meals and bakery products onto their shelves.

- **Hyper local actions:** Grocery stores offering sales points for local restaurants.
- **New fine dining and gourmet concepts:** The quality of the meals deteriorates during the delivery time and due to that many restaurants have started to develop prepared meals that customers can prepare on heat at home.
- **Meals for a whole week or whole menus:** Including starters, main courses, desserts, and heating and finishing instructions.
- **Festival/Celebration day – Menus:** For example, 1st of May-event and Mothers' day packages for home preparation purposes.

- **Restaurant providing customers ingredients:** For example, a “Bouillabaisse Box” can be ordered as a takeaway or home delivery and it contains broth and other ingredients as well as preparation and seasoning guidelines.
- **Gourmet options in grocery stores:** For example, burgers that can be bought from a grocery store and prepared in couple of minutes at home
- **Themed Packages:** “Friday package”, which includes a bouquet of flowers from a local shop and local delicacies for diner as a delight for starting the weekend.

The service ideas above, are all examples of providing new services, but also more personal service experiences. Some might argue that the restaurant business may harm their core business while new services might make customers no longer want to come to the restaurants. None the less, this can also be a potential way to introduce gourmet food and famous restaurants to a new segment of customers who would not normally attend fine dining places (Tuominen & Puhakainen 2020).

The packaging industry has been developing different solutions towards lean, green, and convenient packaging (Nylander 2019). Additionally, plastic-freeness and smarter material options have been playing an important role in research (Nylander 2019). During the pandemic, new services in food and retail have transformed packaging technology into an instrument for these new services. Furthermore, it has been delightful to see how many new smarter and fiber-based solutions have appeared in the takeaway packaging markets. It seems that the packaging industry was ready to react to demand at the right time with greener solutions.

Sudden situations, even when not proper black swans, make communities and companies act fast in a creative way. Well thought out and designed packaging has an important role in saving the restaurant and grocery business and it is crucial for new services, which appeared after society went into lockdown and businesses required new ways to survive. Takeaway culture has been long seen as unnecessary consumption. However, now the attitude has shifted. New ways of consuming and packaging are not seen as ecological problems, but as a safe way to continue life.

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Katariina Mäenpää

REHOME – Solutions for primary needs

Summary

Although the relevance of design for society and the environment has been emphasised especially lately, the response of design to social, technological and environmental concerns has been recognised among various institutions and individuals since the end of the nineteenth century (e.g. Forty 1992). REHOME is the pursuit of contributing to that discussion with a new, fresh and open-minded educational approach. REHOME got a form in a furniture collection for temporary housing and emergency accommodation designed by young design students along their path towards becoming professional designers. The design process included multidisciplinary research and product development cooperation. The aim of the REHOME project is to commercialise the collection in order to create new business opportunities and employment possibilities for the Lahti region's bio-based industry, to support its foreign export prospects and, above all, to provide an inspiring learning environment for particularly relevant global phenomena for design students.

Keywords: social design, regional development, co-operation, design education

The very beginning

The year 2015 was very drastic: the escalated situation in Syria and the Middle East caused a huge wave of refugees that affected all of Europe, all the way up to its northern parts. During autumn 2015, hundreds of refugees arrived to Hennala, the outgoing garrison area in Lahti, where the need for emergency accommodation became evident. The acute problem was solved by ordering the needed amount of bunk beds from Ukraine, but that was not the most sustainable solution. Next to the garrison area, there is a factory owned by Stora Enso that produces most of

cardboard and corrugated board in Scandinavia, and just by crossing the street, the idea was born in the mind of design lecturer Vesa Damski: Could it be possible to provide a more sustainable solution by utilising design tools and bio-based materials?

The students grabbed to work according to Sanders' (2008, s. 3) map of design research and practice by utilising a research-led, participatory mindset and user-centred design methodology. Also, the design process was run following the socially responsible design criteria defined by Melles, de Vere and Mistic (2011) as carefully as possible:

- Need: Does the user or community need this product/solution?
- Suitability: Is the design culturally appropriate?
- Relative affordability: Is the outcome locally and regionally affordable?
- Advancement: Does it create local or regional jobs and develop new skills?
- Local control: Can the solution be understood, controlled and maintained locally?
- Usability: Is it flexible and adaptive to changing circumstances?

- Empowerment: Does it empower the community to develop and own the solution?

As a result of the course implementation, a furniture collection of ten pieces of furniture was established, first in the Habitare furniture fair in September 2017 and again in the Milano Salone del Mobile collection in April 2018. The international publicity was so encouraging and effusive that the need to develop the concept further was evident. Thus, with the support from European Regional Development Fund, a formal REHOME project was started at the beginning of September 2018.

The REHOME project has consisted of the following activities: product development and concepts, the recognition of business potential, and the creation of an innova-



Picture 1. A compilation of REHOME furniture (photos by Antti Turunen)

tion network and SME value chain, as well as marketing and promotion. As a result, a tested, customised furniture range tailored for different customer segments will be represented in 2021. Also, a local SME value chain for producing temporary housing and emergency accommodation solutions for the growing markets in Europe and the Middle East is built.

The project has hitherto also produced background studies and reports regarding humanitarian business that enhances the local capabilities to develop a globally interesting service offering and, thus, increase the economic impact regionally. In addition, promotion and marketing actions targeted towards international partners and suppliers have been planned.

The key objectives

The main goal of the project has been to create business concepts and furniture solutions under the name REHOME for temporary housing and emergency accommodation through research, design and development cooperation in the Paijat-Hame region. The purpose has been to enable entry to the global market for regional companies, particularly SME industries. The aim has been to refine the regional value chain that produces accommodation and furniture solutions, which would facilitate the emergence of new business and new companies based on the region's emerging industry and service business. The main goal of the project has been to bring forth SMEs as business operators and to spar with the network to create new business and jointly develop new products for humanitarian business.

The first step on this way was to design a comprehensive product and service concept for temporary housing and emergency accommodation. The collection utilises the mechanisms of the Finnish forest industry and bio-industry, the production is fully automated, cost-effective and on-demand based. The first pieces of furniture are ready for product testing and all of the above-mentioned prerequisites are met. The second objective is to develop business concepts, as well as marketing and sales applications for the purposes of sales needs. This phase is still in progress as the project as an entity proceeds. Thirdly, a regional innovation network that produces research, development and testing is coming together. Conversation and cooperation with the representatives of stakeholders and relevant operators have been developing steadily along the project since its very start.

A regional value network and business network that provides temporary housing and emergency accommodation business and builds a production chain to manufacture products exists and is ready for action as soon as the pieces of furniture are finalised for production. Pilot testing the concepts in practice was delayed because of the corona epidemic, but it will be conducted during 2020 if the situation permits. Finally, the official launch of developed concepts for international partners and procurement organisations (states, the UN, NGOs, aid organisations, international online business operators etc.) will happen at the end of the project (i.e. April 2021).



Picture 2. A bunk bed by Henri Mertanen (photo by Antti Turunen)

Putting the project into the regional strategic context

Design is one of the three spearheads of the smart specialisation in the regional strategy of Päijät-Häme. Further, the provincial priorities for design are industrial, service and communications design. The aim is to promote the resource-wise use of materials and energy, and the transition to a circular economy. REHOME underlines all these

principles.

The aim of the provincial strategy is to increase the value added. The vitality of existing business ecosystems is crucial for regional development, while new businesses and much-needed jobs can be created around them. As a new opening, the REHOME project offers new opportunities to develop business with SMEs in the region for new customer segments in completely new

markets, building heavily on existing value networks in the furniture and packaging industry. Also, the regional programme of Päijät-Häme is supported by experimenting in new growth areas, and the project's measures can be used to find growth potential in humanitarian business.

Evaluating the innovative character

We face global phenomena, threats and challenges at an accelerating rate in every corner of the world. Rapid and agile development and smart solutions are needed to solve crisis situations. The central idea of the REHOME concept is to develop a modifiable product and service package into a sustainable and cost-effective solution for several needs concerning temporary housing and emergency accommodation. From the underlying furniture collection, different entities can be assembled according to the needs of the target groups.

A special added value is the lightness of the flat-packed furniture solutions, space-saving compressibility and easy

assembly without any tools, as well as visual instructions that are understandable without any literacy and language limitations. The products are also easily recyclable according to existing sorting and reprocessing processes, thus being widely applied as part of circular economy mechanisms. The concept also enables the decentralisation of manufacturing, sales and distribution, for example, closer to crisis areas, when suitable co-operation and subcontracting companies are found. That supports the local recovery from a crisis both economically and socially. However, the advantage of Finnish domestic production is material and product safety, as well as security of supply, which is central in crisis management situations and which is seen as a significant competitive advantage for the REHOME concept. It is also important to increase the process degree of exported products instead of just exporting raw materials. A regionally innovative aspect is indisputably opening completely new markets for local SMEs and supporting the new networks and ecosystems for humanitarian markets.



Picture 3. A single bed by Jussi Alanen, private space by Topias Kanto (photo by Antti Turunen)

The impact of the project in the country, region and local area

As was brought out previously, one of the main objectives of the project is to enable the entry to the global market for regional companies, particularly SME industries. Accordingly, a regional value chain that produces accommodation and furniture solutions, facilitating the emergence of new business and new companies based on the region's emerging industry and service business, has been under construction on the project. The main goal of the project is to bring forth SMEs as business operators and to spar with the network in order to create new business and jointly develop new products for humanitarian business.

Consequently, the REHOME project has an impact both domestically and abroad. Local measures support businesses and enhance the employment situation, which is also very meaningful on the social and individual levels. Regional- and national-level impacts will be the improvement in competitiveness, boosting economic well-being as well as social aspects. Similar effects can be

multiplied in foreign destination countries where the impact on local recovery can be even more crucial. Crises often cause severe damage to these vulnerable countries and the outcome of implementing REHOME measures (i.e. localisation) can provide new beginnings at all levels of society. Individually, the primary needs can be met and the process of healing can begin. Economic revival supports society, and a convalescent society is safer for its citizens and so on.

The environmental aspect should not be forgotten. REHOME promotes environmental awareness in both concrete and more abstract ways. The biobased materials and eco-friendly production processes are just the first step. The environmental load of the furniture collection in every phase of its life cycle is taken into account, and this works as an excellent example for project lines that will be designed in the future and opens up completely new thinking for several audiences in different locations. It reminds us of our responsibility to Mother Earth.



Picture 4. A compilation of REHOME furniture (photo Antti Turunen)

Conclusion

The REHOME project, proudly representing sustainable humanitarian Finnish design, has produced a biobased furniture collection to meet primary needs – the result of a well-prepared design and learning process. REHOME wells from talented young students and environmentally responsible thinking, striving towards sustainable design. The combination of research and educational organisations, as well as business, provides a vital platform on which to educate professionals, design products and services, and to develop competences for future needs. The REHOME collection is an excellent solution for emergency accommodation and temporary housing, and ready to conquer the world.

The regional value chain built during the project is based on economic principles, and in order to ensure financial sustainability, it is essential. Negotiations are currently going on, aiming to set up a company to run the REHOME business. It is very important to have an ecosystem to underpin a starting business, whether it operates as a part of an existing company or a completely independent firm. Local subcontractors with reliable production lines and partners who

have already established their business provide valuable support when a new business is developed. Additionally, there are several local customerships determined which provide a solid base to begin with and a platform for product testing and development. Proximity enables a fluent and quick cooperation, as well as sustainable results. Large global humanitarian organisations are financially stable clients and their delivery channels are credible. The future looks promising for REHOME.

Finally, the REHOME project aims to create workplaces and enhance employment. A job means economic well-being but also enables mental comfort and societal welfare. The furniture collection provides an affordable housing solution for associations offering shelters for the homeless and other individuals in need. The furniture can also be used in asylum centres and other emergency accommodation where they meet the primary needs of the refugees or evacuees. REHOME is a sign of humanity and, as such, a very significant demonstration of dignity for those in need – in Finland as well as abroad.

Homepage: www.rehomefurniture.com

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Annariina Ruokamo

The designer's role in the circular economy of textiles – Design for waste minimization

Summary

Whereas the traditional design process focuses mainly on the function and aesthetics, in sustainable and circular design process a designer observes the whole life cycle of a product by considering all the steps during the product lifecycle – design, manufacturing, logistics, retail, use, reuse and finally recycling or disposal. There are also some sustainable design strategies to ensure waste minimization already at the design stage.

Keywords: circular design, circular economy of textiles, design for waste minimization, designer's role, circular fashion

Circular design is the starting point for successful textile recycling

According to Ellen MacArthur Foundation, it is estimated that even 80% of the product's environmental impacts are locked at the design stage (Ellen MacArthur Foundation 2020a). Today's designers are required to understand the environmental, ethical and circular issues of the industry and implement the innovative solutions for a product's extended lifespan through design decisions.

LAB Institute of Design and Fine Arts is leading the research of designer's role in the circular economy of textiles in the project Telaketju 2. The goal is to find out how to consider recycling already in the early stages of the design process. There were different

circular design concepts created in this task and the aim was to survey and compare how different material choices effect on the product's recyclability.

Design for Cyclability – the base for the Circular Design

In addition to understanding the material production processes, a designer should also understand the processes of recycling both in clothing and textiles. When it comes to clothing, the recycling process includes not only the main material (textile), but also the other components such as zippers, buttons, elastics and finishings. Still the recyclability of the components isn't enough. A designer must design for disassembly; the

components need to be separated in the beginning of the recycling process.

In recycling process, the product is reduced all the way back to its basic materials by reprocessing. Finally, the materials are remanufactured or repurposed into new products. (Ellen MacArthur Foundation 2020). The material can be processed mechanically, chemically or thermally depending on the material. The EU circular economy package will for the first time require Member States to ensure that textiles are collected separately. The new Waste Directive requires Member States to set up such schemes at the latest by 2025. (European Parliamentary Research Service 2019). In Finland, the first industrial end-of-textile refinement plant in the Nordic countries, will open in Paimio in 2021. The plant can drive the textile sector towards a circular economy and begin processing textile waste as an industrial raw material (Recycling Magazine 2020).

When aiming to recyclability a designer should prefer the materials that are recyclable in current recycling systems, such as mono materials. Mono material strategy alone is still too weak starting point for holistic circular design, since a designer must still consider the clothing's use over the other aspects. A designer must primarily design for a real need and for use. These aspects are the most relevant in circular design. A material choice is successful from both circular and sustainable point of view only when it serves the use of the product and finally when the reuse, recycling or remanufacturing opportunities have realistic perspectives in the present or at least in the future.

Design for Waste Minimization

According to Redress, approximately 15% of the clothing textiles is ending up as waste already in the beginning of the clothing manufacturing process. That waste is the surplus material of the layout plan and cutting (Redress Design Award 2019). With Zero Waste design method, the pre-consumer textile waste can be totally reduced. That still leaves room for the other waste generated during the total lifecycle of the garment. Zero Waste design can be seen as one tool for waste minimization in the clothing design.

When aiming for waste minimization, the design process is slightly different compared to the traditional design process. One remarkable difference is that Zero Waste itself isn't suitable for mass production because of the variations between different sizes. Still, the material is more essential leader in the Zero Waste process than in the traditional one, since in Zero Waste strategy, the material measurement is the starting point of the whole design process. Availability and other features of the material are guiding the end result in an aesthetic and functional way, whereas in the traditional process the product may end up with the same features even when made out by using different materials. Limitations can actually encourage a designer to end up with more innovative solutions. The same starting point leads the process when using upcycling as a sustainable design strategy.

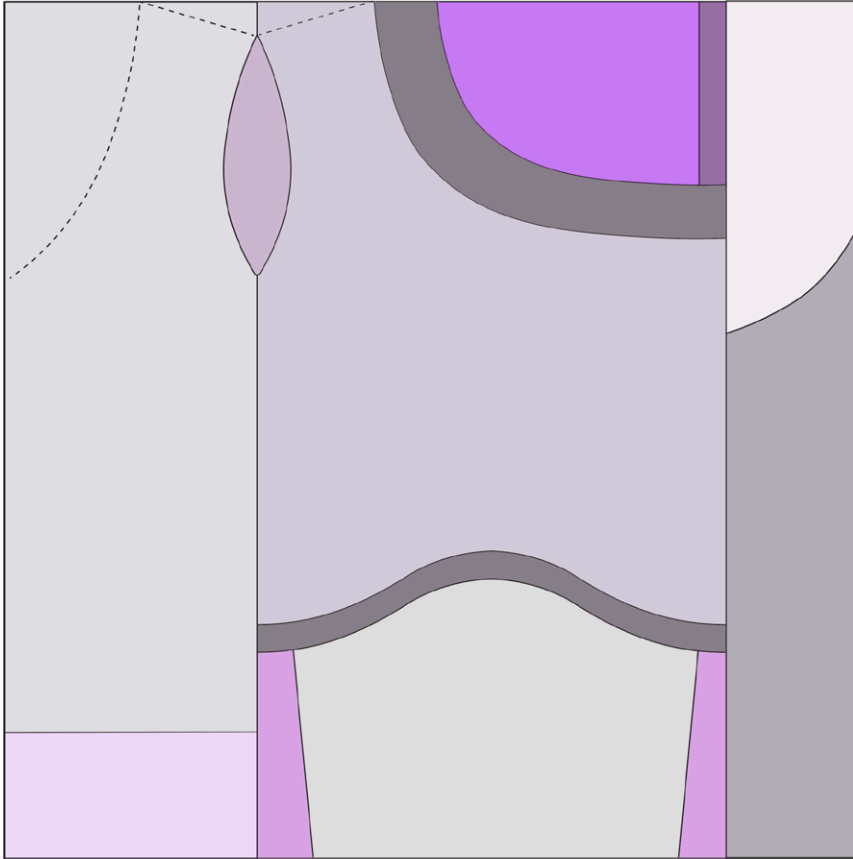
In Zero Waste process the pattern making is one of the design tools since the pattern making happens all the way through the design process. In the traditional way designer can already give away the final

sketch and instructions to the pattern maker without even designing the pattern. The pattern making process will follow the instructions strictly in traditional design process. Zero Waste design is all about prototyping, testing, failing and testing all over

again. Prototyping can also be seen as one of the sketching tools in Zero Waste design. In the traditional design process prototypes are usually made at the end of the design process when wanting to make sure the designed product will work as planned.



Picture 1. Mirka Uunimäki's Zero Waste outfit, Spring 2020. Photographer: Lisa van der Rhee



Picture 2. Mirka Uunimäki's Zero Waste pattern for a jacket. Zero Waste strategy reduces the cutting waste totally already at the design stage.

Remanufacturing through design – new product, higher value

From an industrial point of view, a remanufactured product can level up in a higher hierarchy compared to the old one if the

features are better than in the previous product. The main point of remanufacturing is to use discarded product or parts of it in a new product. The new products are pointed for the new users. (Karvonen et al. 2015).



Picture 3. Beda Suni's Dye or Die collection was photoshooted for PINNI magazine in Autumn 2020. Photographer: Kalle Kaltio

Upcycling is a category for remanufacturing and with zero waste design it can be considered as one sustainable design strategy. In upcycling the repurposed material comes from the used textiles such as curtains or other home textiles (Redress Design Award 2019b). Upcycling targets to the products that are either of same value or higher valued than the previous products. The opposite term for upcycling is downcycling, which means that the old product reaching the end of its lifecycle is processed into a lower valued product. In the textile and clothing industry this kind of waste is usually the pre-consumer cutting waste from the beginning of the clothing production. The waste is mainly either discarded or downcycled into the use for the car industry to become the lower valued material for the insulations or oil rags. Also, when recycling the old polyester shirt back into yarn is considered as downcycling, since the yarn itself has a lower value than the garment.

In the project Telaketju 2, students created outfits by using sustainable design strategies. They were using discarded textiles and upcycling them with the same or higher value. Upcycling isn't about just fixing, updating or maintaining the old textile product, but in this task the designers were using discarded textiles (which were already at the end of their current life cycle) as a starting point for a totally new product for totally new purposes. The aim was to give a new extended life cycle for a textile product, but also to use other sustainable design strategies for waste minimization, cyclability and low environmental impact for the processes with ensuring the commercial scalability of

the idea.

The wearable design's third grade student Bedä Suni designed a collection that uses discarded towels collected from hair salons. The collection has been part of the Sustainable Design course, Telaketju 2 project and Midway project. Discarded and stained towels are usually thrown away into mixed waste or at some cases given to the animal shelters. The towels are stained in use and their lifespan is usually rather short. Bedä Suni wanted to reuse the towels and she wanted to point out the stains by creating a continuous pattern on the towel fabric by dyeing it a bit more. Pointing out the flaws of the original material, the stained look challenges our ideal of beauty, hygiene and aesthetics, that

are usually comprehended as societal norms. The collection is also designed by using zero waste method.

Circular design requires a lot of extensive expertise from the clothing designer. In circular design, designer should aim to design a product which doesn't follow the linear model of take-make-waste, but which instead creates the ideal circumstances for the circular model to actualize. Circular design at its best can create new circular business models into use. For example, by choosing recyclable materials, designer can lead the way to the new circular service models such as take-back or second-hand selling services.

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Minna Cheung

Designing clothes for rent

Summary

Renting clothes is seen as one way of reducing the environmental load caused during the production and use of garments as well as decreasing the amount of textile waste. So far, renting has not become a normal operating model among consumers. Consumers' attitudes towards renting clothes and owning them are slow to change. Nowadays, the selections that clothing rental services provide consist of clothes designed for purchasing. With garments intended for renting, the design process should take into account different characteristics than with garments intended for purchasing. Choosing durable materials, creating garments that are easy to modify, and making sure that the design fits easily on different customers is essential for rental clothing, whereas these are secondary features when designing clothes that will be purchased for personal use.

Keywords: Circular economy, clothing design, clothing rental, clothing as a service

According to the principles of circular economy and sustainable product design, the production and use of all kinds of products should cause as little environmental stress as possible over the entire life cycle of the product. This environmental stress is influenced by many factors. For clothes and accessories, the number of times they are worn has a major impact.

Extending the lifecycle of textiles has a significant impact on the climate impacts of the textile industry. The carbon dioxide emissions of the textile industry would be reduced up to 44% if the current average of 160 times of wear per garment was doubled (STJM 2020, 57).

The current fashion and clothing business is based on sales and ownership, a model of planned obsolescence. This model has enabled the industry to become a major global employer and, on the flip side, a major source of pollution. Production volumes have increased radically while prices have decreased, and single garments are worn fewer and fewer times. The average garment stays in a wardrobe for about three years, with only two months of active use (Suomen Luonto 2018). In addition, the *Me naiset* magazine reported on research results that indicated that 60% of the clothing in Finnish women's wardrobes is being left unused (Norokorpi 2019). Nevertheless,

continuous growth has been predicted for the industry; for example, Amazon predicts a five-fold increase in turnover by 2022 compared to their numbers in 2018 (Fibre2Fashion 2018).

In order to balance the situation, one solution is the “clothing as a service” concept, which, in practice, means sharing clothes and accessories by borrowing or renting. This is no new invention. There is a long tradition of renting clothes, although rental services have mainly focused on formal dress in the past. As the overall price level of clothes has decreased and consumption habits have changed, the number of rental companies focusing on formal wear has decreased.

The beginning of a new era was forecast by Nopsa Vaatelainaamo, a clothing rental service that opened in Helsinki in summer 2011. The name refers to borrowing, but it was a paid rental company whose product range included everyday items and formal wear from 27 designers. The rental service was closed in 2014. At the same time, new rental companies were established in 2013, such as Vaatepuu, which still exists and has extended its operations to several cities. A few clothing manufacturers have expanded their operations with rental services. One of the pioneers of direct rental operations is Houdini Sportswear who started renting outdoor clothing in 2012. The clothing items can be rented for 1 to 8 days. Prices vary based on the rental period and the number of rented products (Houdini Sportswear). MUD Jeans, a manufacturer of sustainable denim, started leasing jeans with the Lease A Jeans programme in 2013 (Mud Jeans). The membership fee for the service is €29, and the monthly fee is €7.50. The rental

period is 12 months, after which the jeans can be kept or returned and replaced with new ones, starting the cycle over again. In the first year, the annual total for the rental is €119 ($29 + 12 \times 7.50$). The membership fee is paid only once, so the rental price for the following year will be €90 (12×7.50).

According to the international State of Fashion 2020 survey and report, only 12% of industry experts (35 of 290) picked the “End of Ownership” theme among the three most important phenomena affecting business. Experts working in the industry still see lending and renting as one of the new business opportunities of the future in the transition from owned goods to using services. The operating model has not yet reached critical mass, and its significance will increase in the future (McKinsey 2020).

Similar results have also been obtained in a consumer survey by the Telaketju project (Telaketju 2020) where consumers were asked about their interest in the different business models of circular economy. According to the results, only 34% of respondents (102 of 300) felt that the “Clothes as a service” business model was very interesting or somewhat interesting. Respondents were men and women with an average age of 40. The results of a survey carried out on students of wearable design showed that women with an average age of 22 and one man were not aware of the possibility of renting and had not needed the service in question. They are not interested in renting since they have no need for it, or they want to own their clothes. Most support was found for renting outer garments, festive wear, and accessories such as bags. The respondents

of the Telaketju study were most interested in festive wear or formal wear as well. (Telaketju 2020)

In both surveys, the price and ease of renting and the appearance of the product emerged as important factors. The students also considered it important to be able to try on the product before making a rental decision. In my opinion, this answer is a good reflection of how deep-rooted the model of purchasing personal items is. Traditionally, the final purchase decision is only made after the product has been tried on. Of course, it is pointless to pay rent for an ill-fitting, unused product. The survey for students was conducted just before the COVID-19 pandemic. Even then, hygiene was mentioned as an obstacle to renting. The survey carried out on the students of wearable design represented a small, local and limited group, and the results do not necessarily reflect the views of the entire age group, but still give a similar perspective to the results of the consumer survey by the Telaketju project.

The students of wearable design at the LAB Institute of Design were given a product design assignment with the purpose of examining whether the product design process differs from the traditional process when the product is intended for rental. Nowadays, products that are being rented have primarily been designed to be purchased for personal use. The assignment involved examining the characteristics required of a product intended for rental, and the possibilities it entails for the product designer. The assignment was carried out in cooperation with Vaatelainaamo Vaatepuu.

The results showed that the stages of the

design process do not differ from the normal process. Instead, the focus of design choices made throughout the design process is different in many respects.

The purpose of the comparison was to highlight, from the point of view of the product designer, the recurring aspects of different products. Of course, it can be argued that all the characteristics in the table are important objectives of product design in general. In this context, the product requirement was taken into account according to the prevailing business model. The biggest difference in requirements was that the product would fit on various body types and proportions without modifications, which is not important when the product is purchased for personal use, but very important when the product is planned for rental. On the one hand, perfect fit may be demanded from a product purchased for personal use. On the other hand, it would be important to be able to modify and adjust a rented product easily, even without the help of a seamstress. The rental product should be able to withstand regular and continuous use and maintenance, which has a significant impact on material and accessory choices and product details. A product purchased for personal use is used less and has time to rest between uses, and it does not need to be washed after each use. Airing is enough for some products.

From product designers' point of view, one of the bigger differences is related to product pricing, which is emphasised for products purchased for personal use. Typically, a target cost is set for the products to determine the cost of fabric and accessories that can be selected for the product and

PRODUCT BEING DESIGNED								
PROPERTY	PURCHASE				RENTAL			
	not important	not very important	some-what important	very important	not important	not very important	some-what important	very important
perfect fit				x			x	
fits different bodies	x							x
easy to put on		x					x	
easy to combine			x			x		
versatile			x		x			
durable material		x						x
doesn't show stains			x					x
easy to maintain (washing/ironing)			x					x
easy to mend/adjust		x					x	
easy to modify		x						x
different from basic clothing		x						x
timeless/classic			x			x		
trendy/fashionable			x			x		
desirable				x				x
affordable price				x	x			
reusable			x				x	
easy to recycle			x			x		

Table 1. Comparison of the requirements for bought and rented products and considerations for designing them.

the amount of work required to produce the product. Of course, the production costs of a rented product are also important, but the target cost is more flexible, as the price for the consumer is the same regardless of manufacturing costs. Instead of achieving the lowest possible price for a particular product, it is more important that the product is durable so that it can be used for as long as possible. The appearance of the product is subject to various requirements. People are more likely to buy timeless basic products, whereas they are more likely to rent items that stand out visually. This applies to both

festive and everyday wear. The design of both kinds of products aims to create items that are desirable for the consumer. For a rental company to stay in business, customers need to find suitable and desirable products in their selection so that the products are being rented instead of hanging on the racks.

In its visual appearance, the design collection by student of wearable design Veera Laaksonen does not differ from clothing designed for purchasing. The design of these garments has successfully taken into account the requirements set for rental products.



Designer: Veera Laaksonen PUMU19 (2020)

Image 1. Example of a collection designed for renting.

Laaksonen started the design process by creating a customer profile. In the profile, she particularly paid attention to women who wear larger sizes, as they have limited options in fashionable products both in retail and rental selections.

The designer's goal was to take the following characteristics into account in the details of the garment:

- the size is adjustable or one size fits many (loose fit, not form-fitting),
- elastic waistband (not shown in illustrations),
- the dimensions and design of the garment are suitable for different body types (mid-length sleeves and cropped trouser legs, bare shoulders),
- the garment can be easily modified (no details near the seams or edges to limit modifications),
- products are easy to maintain (won't show stains, can be machine washed, won't wrinkle easily)
- the products are long-lasting and durable both in terms of quality and appearance.

The products stand out from so-called basic products but do not have the identifiable characteristics of a particular season or follow a certain trend. The products can be easily combined in different ways. Furthermore, they are suitable for both spring/summer and autumn/winter wear. Aesthetic decisions and pattern solutions promote the efficient use of material, layout of small and large pattern pieces. Using large pattern pieces facilitates later reuse, for example in a new product.

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Reetta Nousiainen & Ulla Saarela

Can culture and tourism actors find each other?

Online studies in culture tourism as a bridge to co-operation

Summary

The field of culture tourism includes a diverse variety of actors and greater cooperation between the sectors is needed. Culture tourism studies are one way of responding to this need. This article deals with the challenges that affected the Culture Tourism for City Breakers project and the results that were achieved during the project.

Keywords: culture field, culture tourism, cultural tourism, tourism field, online studies

Kulttuurimatkailun sisällöt

Tuotesuosituks: Kulttuurimatkailutuotteet



Picture 2. Susanna Markkola Culture Finland umbrella programme, Culture tourism content, Culture tourism in Finland. Presentation at the Lahti CTCB Culture tourism forum on 20 February 2019.

Identified challenges

The fact that content produced by Finnish creative industries and the culture and art field could be more extensively utilised in tourism has been discussed for a long time. However, the problem is that culture and tourism actors do not necessarily find each other. People have also recognised that the tourism sector does not understand the operating and earnings logic in the culture sector - and vice versa. (Business Finland).

Culture Tourism for City Breakers (CTCB) was a national culture tourism project involving Metropolia University of Applied Sciences, Haaga-Helia University of Applied Sciences, JAMK University of Applied Sciences and LAB University of Applied Sciences during 2018-2020. The project was implemented in close co-operation with Visit Finland's Culture Finland programme, as a continuation of the Luova Matka - Culture Creators Go Tourism project carried out earlier. (Business Finland, 2018). The starting points for CTCB were the identified challenges associated with bringing culture and tourism actors together. The project approached this challenge from two angles: by organising co-developer forums with representatives from both sectors in the implementing cities, and by developing a UAS-level study module in cultural tourism.

Local actors need a co-ordinator

The field of actors in culture tourism is quite diverse, ranging from regional tourism organisations and international festivals, grassroots arts and urban culture actors to bricks and mortar shops. The series of co-developer forums held in Helsinki, Lahti and Jyväskylä during spring 2019 successfully

reached a wide range of actors in the sectors.

The participants in the Lahti co-developer forums included event organisers, local guides, representatives from the restaurant industry as well as tourism and cultural service operators. The most challenging aspect was attracting representatives of regional tourism organisations. The other participants also indicated that they would have liked to see more larger organisations participate in the development of networking and co-operation. The cause of this could be scheduling, but it may also be due to a previously identified gap between the different operating models and priorities of the actors.

The participants from the culture and tourism field felt that networking opportunities like the co-developer forums are necessary, but the activities require a long-term approach and a coordinator to arrange the meetings. This is not a new observation. Maintaining and co-ordinating a network of local actors requires people and resources, but this is not necessarily included in anyone's job description (Siivonen 2009, 76).

In Lahti, the four co-developer forums were followed by an urban culture seminar arranged in autumn 2019 in co-operation with the city's event manager. The creative industry actors also discussed the possibility of using a relay-type model to arrange future forums. This would be a low-threshold way for the participants to take turns arranging the event. However, the corona pandemic in spring 2020 prevented any experiments with a model originating at the grassroots level. There is a clear need for networking and co-operation, because small actors in the field often have to deal with challenges

that are very similar in nature. This was also highlighted at the national culture tourism seminar held in autumn 2019.

Changing the world one student at a time

When examining the challenge of bringing different sectors together over a longer period, education is one method of changing the world - one student at a time. The 15-credit cultural tourism online study module developed in the project introduces tourism students to the culture sector while

culture actors become familiar with the tourism industry. The studies are also suitable for entrepreneurs or other actors and will be available as open university of applied sciences studies in the future.

The objective of the courses is to increase competence related to producing high-quality culture content and making it available to tourists. In addition to culture content, multidisciplinary networks of actors as well as expertise in the areas of product development, sales and marketing are also needed. Tourists can become new target groups for



Picture 3. Programme Manager Susanna Markkola from Visit Finland's Culture Finland programme talked to regional actors about culture tourism in Finland at the first joint meeting of the Lahti Culture Tourism Forum on 20 February 2019. Photo: Katariina Pakarinen.

art and culture, but this requires dialogue between the sectors in order to develop the profitability, business orientation and untapped potential of both culture services and tourism companies. (Sydänmaanlakka 2020, 5). Facilitation and intermediary competence that brings actors from different fields together also play an important role.

The cultural tourism study module implemented in the project during spring and summer 2020 was provided in both Finnish and English. The module consisted of three 5-credit entities: An Approach to Cultural Tourism, From Idea to Product in Cultural Tourism, and Cultural Tourism as a Change Agent. Students had the option of completing a single course or all three. Implemented as virtual studies, the module included group work and tasks as well as joint online meetings with the teacher. Culture students accounted for 53% and tourism students for 47% of the participants in the Finnish version of the module, while 31% of participants in the English implementation were culture students and 69% tourism students. After each course, students were asked to provide feedback. The piloted study module received good feedback and development proposals for future implementations. According to the participants, the module was well implemented, skilfully constructed, clear and educational. The feedback also mentioned that participants felt that the group work and tasks provided an important opportunity for students in the culture and tourism sectors to get acquainted with each other. (Saarela 2020).

The corona pandemic hit the culture tourism field while the courses were being

piloted in spring 2020. Piloting the study module in that new situation quickly made it clear that the need for its content is even greater than expected. The cultural tourism study module emphasises co-operation, networking, anticipation as a way of working, and understanding change. Culture tourism actors need these skills now more than ever.

Making culture content available to tourists

The corona pandemic had a huge impact on culture tourism – public events were cancelled and tourism came to a complete standstill. Susanna Markkola, who runs the Culture Finland umbrella organisation, wants to remind people that culture and art always play an important role in dealing with crises. In Finland, nature and space will provide a good foundation for offering culture tourism experiences when the crisis begins to fade. (Markkola 2020, 8)

The popularity of local tourism, which focuses on everyday life, nature, history, traditions, lifestyles and events, has been increasing in recent years. This will become even more important in the aftermath of the pandemic. Small-scale local tourism is culture tourism at its best: travel and entertainment, new experiences and self-development. (Petrísalo 2009, 184)

However, independent and spontaneous trips to local culture and nature sites require sufficient information about the sites and services so that people can learn about them in advance and during the trip. (Petrísalo 2009, 184) Although this topic has been discussed for a long time and the number of different online services and electronic plat-

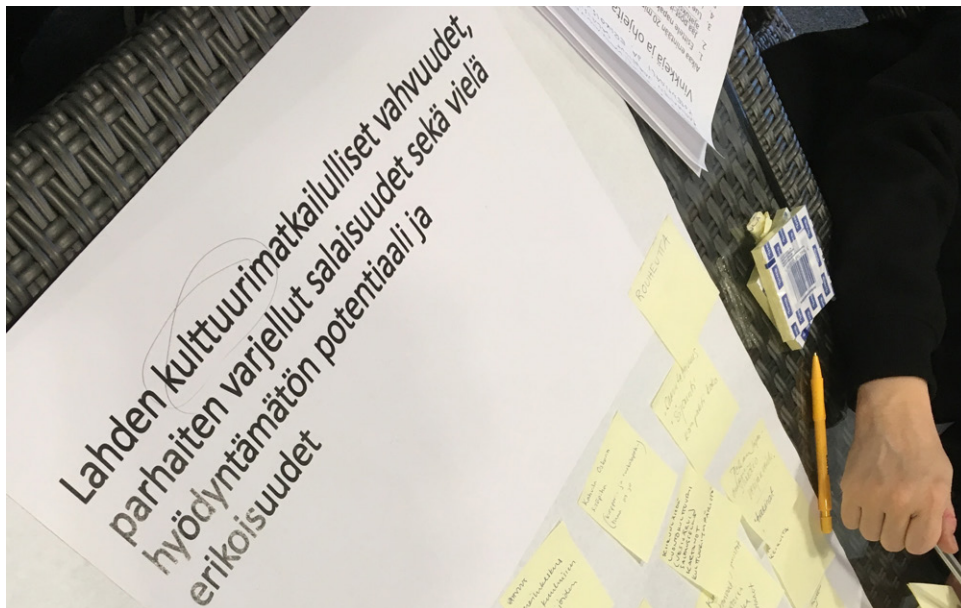
forms has increased considerably, there is still a lot of work to be done. Having too many platforms is also a problem, since up-to-date content is not published or updated on its own. (Nousiainen & Koukka 2019, 68-69)

Of course, making culture content more accessible to tourists is not limited to culture tourism alone - today's tourists can be seen as hybrids who are equally likely to enjoy nature and culture, or beach and city holidays during their journey. (Laaksonen 2020, 35)

The need for change agents

As tourism recovers from the pandemic, it is becoming increasingly clear that products and services must be built on a sustainable basis. It is essential to keep important tourism trends in mind: responsibility and sustainable development, authenticity, a sense of experience and relevance. (Laaksonen 2020, 36)

In terms of experience, it's still important to remember that an experience is not always easy to duplicate and sell as a



Picture 4. People networked and developed ideas at workshops held during the Lahti co-developer forums. The forums were characterised by an enthusiastic, community-based approach. Photo: Katariina Pakarinen.

package. When creating an experience, the role of the customer is just as critical as that of the producer – an experience cannot simply be produced, it must also be perceived by someone. (Karkulehto & Venäläinen 2016, 28). On the other hand, a lot of experiences and culture content originate at the grassroots level – from local and urban cultures. This also requires closer networking and co-operation with local communities, which the tourism field should take into account as concrete co-operating partners. (Nousiainen 2019)

Therefore, the genuine multidisciplinary

approach and change agent competence provided by the new study module are very much needed in the field.

Authors: Reetta Nousiainen works as a project manager and Ulla Saarela is a project adviser in the Culture Tourism for City Breakers project, which was funded by the European Social Fund. The project was implemented in co-operation with Metropolia University of Applied Sciences, JAMK University of Applied Sciences and Haaga-Helia University of Applied Sciences between 1 August 2018 and 31 August 2020.

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Outi Peippo and Lotta Pyykkönen

Teaching fine arts online

Summary

Visual artists commonly use digital devices and programmes to produce art, but teaching visual arts with digital tools is still a new concept. How is it possible to teach visual arts online and how can the web be used to teach art? What other benefits can online teaching have for art? These issues are discussed in the Yli vaaran vuosien project that involves four universities of applied sciences that educate visual artists. The purpose of the project is to develop the education of visual arts to correspond to the artist's current job description and to enhance cooperation between school organisations that teach art.

The Yli vaaran vuosien project piloted an inter-campus cooperation for teaching printmaking. The pilot involved lecturers and students from Satakunta University of Applied Sciences and LAB University of Applied Sciences. The guidance meeting was organised online. The pilot indicated that the web and digital tools work excellently for teaching art when technological matters are in order. A long distance between campuses is not an obstacle to meeting when it is arranged online.

The pilot also tested the flipped classroom model, which is a pedagogical approach that is still rarely used for teaching fine arts. At the event, students presented their course assignments to the other campus and shared their experiences with the methods of printmaking. A flipped classroom develops students' ability to verbalise their actions and art to people they do not know. This is a key skill related to visual artists' communication competence. Also, the threshold for presentations is not too high when the audience consists of a group of peers.

The most important result of the experiment is related to community. The students became aware that people are studying art and facing the same challenges in other schools as well. The hope is that cooperation between campuses will improve the sense of community among fine art students and ease the loneliness related to the profession. Meeting online is easy and straightforward.

Keywords: Fine arts, digital tools, teaching fine art, networking

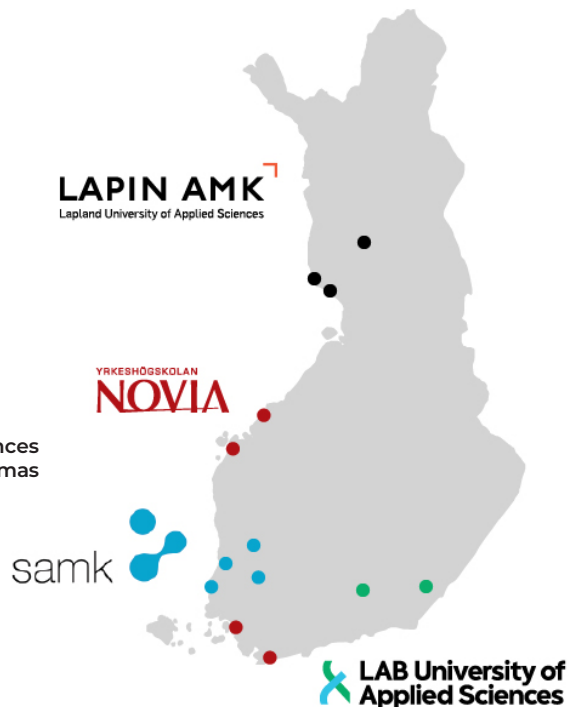
Overcoming the years of danger

The coronavirus pandemic has forced all educational organisations to reorganise their teaching and move it online. This has happened for fine arts education as well. If the virus can be said to have caused something good, it is the fact that it has made it a necessity to practice and apply new methods of guidance for teaching fine arts. Remote learning has also introduced pedagogical approaches that have been utilised relatively rarely for teaching art. Using the web and new pedagogical methods has led to reflection on the competence required by the field and how it can be studied online.

The fine arts education at LAB University

of Applied Sciences is involved with three other universities of applied sciences in a project called Yli vaaran vuosien (“Overcoming the years of danger”). The purpose of the project is to develop fine arts education to correspond with the current professional image in the field in order to facilitate students’ transition to working life. The challenge is that some visual artists cannot find their place in the labour market and are forced to switch to other professions after graduating. In addition, the work of visual artists is comparable to entrepreneurship in society, which also requires skills besides those related to producing works of art.

Image 1. The universities of applied sciences involved in the project on a map (image Tomas Regan).



In the Yli vaaran vuosien project, universities of applied sciences are for the first time examining the job description of actual visual artists: what do graduates and those still studying fine arts think about the education they have received and the competence it offers? Is it still in line with current professional characteristics, and how should the educational programmes be changed? Coronavirus also impacted the focus of the project's development objectives. Art and digitalisation is one of the key areas of development in the project. The web is an important channel for the sale and distribution of art, and visual artists need skills to make full use of it. As a result of this new situation, online education of art became one of the questions of the project. What characteristics are involved, and what skills and requirements are highlighted by online guidance?

The aim of the Yli vaaran vuosien project is to develop the working life orientation of visual arts education in universities of applied sciences. The project involves the LAB University of Applied Sciences, Lapland University of Applied Sciences, Novia University of Applied Sciences, and Satakunta University of Applied Sciences. The project has received funding from the European Social Fund.

Possibilities of online teaching in fine arts

The situation caused by coronavirus has shown that the teaching of visual arts at universities of applied sciences is flexible and capable of renewal, allowing for online teaching as well. Not all of the features of teaching art can be transferred online, but some of the studies can be carried out digitally as well.

Digital tools as such are commonly used for producing art and as planning tools. People know how to use the tools and the web, but implementing them systematically in teaching is only now being introduced to the field of fine arts.

As with other subjects, lecture-based learning in fine arts has been the easiest to bring online. The Yli vaaran vuosien project has worked with universities of applied sciences to create a lecture series that is available to all fine art students on four different campuses. For teachers, planning online lectures has had the benefit of having access to the expertise of other professionals in the field. Teachers work on a module and lecture subjects together. This way, students can be offered a versatile study module.

What has not been entirely unproblematic is online teaching related to making art. On the one hand, problems arise from features of art pedagogy that emphasise the dialogic relationship between student and teacher, the reflection of one's actions, and the contemplation of the relationship between artwork and expression. On the other hand, there is also the question of how artworks look when presented online. Often it is not possible to produce a good overall picture on a screen.

In other words, there has been very little visual arts education available online, as it is felt that learning art requires an immediate and fixed relationship between the instructor and student. Also, teaching related to the methods of making art has been based on a type of master and apprentice model where students practise their skills in workshops under the direction of a teacher. In addition,

teaching art has involved the idea that artworks should be examined in an authentic way in order to give in-depth consideration to expression and technique. Because of these factors, the web has been perceived as a poor teaching platform. Online, artworks cannot be viewed as part of the space and light that are essential for assessing the overall appearance of the piece, its composition, and other technical competence.

The studies of fine arts at LAB University of Applied Sciences include courses of artistic work. During the courses, students work on their artworks according to their plans and receive weekly guidance for the process. After some initial hesitation, the courses in artistic work have been transferred online relatively easily. Students can display images of their work to the participants of the course and share information about the artwork. Previously, this was done at school premises.

Online participation requires that students prepare for guidance meetings in different ways than before. The artworks need to be photographed in advance or presented with a live broadcast during an online meeting, by phone for example. Photographing requires a proactive approach. Other students can participate by reflecting on the artworks online just as before. In other words, artworks can be discussed according to the requirements of the course. One good thing about working online is that students can for example share links and images from a topical exhibition or an artist using the same technique. This possibility was often only mentioned when teaching at school premises, and in online teaching, there is a visual and presentational side as well.

Maintaining discussion online requires more input from the teacher than in a physical classroom, as encounters through screens are not as engaging as face-to-face ones. Compared to traditional workspaces, online discussions also entail an increased need to encourage the participation of students who tend to stay silent in the back.

From the perspective of guidance and studying towards a profession, the emphasis on presenting works in a student-oriented manner is a positive thing. Artists' work requires self-direction, and the ability to present works is one of the communication skills included in the profession. Verbalising one's own art is not easy, and it is useful to practice it. In addition, working at home has brought another aspect to the studies: students have had to work on their artworks without the workshops and materials offered by the school. This reflects the situation students will face after graduating as visual artists. They will need to find materials themselves and solve challenges related to workspaces and tools.

Piloting cooperation between campuses

The objective of the Yli vaaran vuosien project is to share teaching and expertise between campuses. The aim is to create training models that correspond with the artist's new job description. With LAB University of Applied Sciences and Satakunta University of Applied Sciences, we experimented with joint teaching of printmaking for the first time. The pilot involved printmaking teachers from both organisations and the students taking the courses. The goal was to

share information on the methods practised during the courses. Satakunta University of Applied Sciences was in the final stretches of a course on the old methods of photography, and LAB University of Applied Sciences was finishing a special course on the exposure methods of printmaking related to the use of photographs and photosensitive materials in printmaking.

The teaching event was organised online with a flipped classroom as the pedagogical approach. The students on the different campuses presented the exercises they had completed during the courses and shared their experiences of experimenting with techniques. The students of visual arts at Satakunta University of Applied Sciences explained how cyanotype is made and how



Image 2. Teacher Tomas Regan from Satakunta University of Applied Sciences greets LAB students (photo Lotta Pyykkönen).

it can be done on different material surfaces. They also talked about developing black and white photographs and exposing them directly to photo paper from a phone or computer screen. For their part, the students of LAB University of Applied Sciences shared information on the “Image on” method and paper lithography, which the students at Satakunta UAS would be working on during their following course.

The online teaching was organised with minimal tools, using computers and video projectors. Some of the students were at the campus workspaces and some were participating from home. The online meeting felt natural, and no one questioned the format of the meeting. Participants were patient with shortcomings related to presentation technology, even though everyone agreed that more focus should be placed on technology and audio quality in future virtual meetings.

Students use social media widely and share images of their works on different platforms. So sharing and viewing images is commonplace. However, in the teaching meeting, presenting the works and showing details required the students to verbalise methods and ideas for images. Verbalisation also had to be done from a completely new perspective. It is a different matter to present artworks to your fellow students than to new colleagues who have never seen your art before. This reflects the situation artists encounter in working life. Presenting artwork through the camera also requires putting yourself in the viewer’s shoes. Because what you want to express or emphasise should be visible and understandable to others as well. At the same time, the students

received feedback from two instructors as well as comments from the other students. The presentation and feedback event with new people likely provoked the students to identify their competence and development needs more accurately, as a new environment with new people makes people reflect on their skills more acutely and in a more self-critical way.

Feedback on the joint meeting was very positive. It was refreshing for the students to find that people are studying art and facing the same challenges in other schools as well. For the teacher, the presence of another expert in the teaching situation also broadens their views on teaching and guidance. Another person always sees something that you don’t. Another teacher will also always do something differently when teaching, giving you the opportunity to learn new methods for your own courses. In addition, I found that students’ peer guidance was very meaningful. I was mainly facilitating the discussion and asking questions. Students presented their works to each other in a relaxed way. The teaching situation lacked that kind of tension that you often have when presenting assignments to a teacher. The students were speaking to their peers.

The challenge of community in the work and online world of a visual artist

It was possible to conduct the inter-campus guidance meeting online. It would also be possible to achieve this by travelling to another campus with the students, but meeting online was immediate and easy. The web creates a free meeting place.

Encounters are important both for studies and because of the restrictions imposed by coronavirus. With all these restrictions, students miss their student community and spending time in a social setting.

Professional encounters are important so that fine art student can meet others studying in the field. In the best case scenario, they can form a community for discussing their studies and their working life as artists even after graduating. A study by Cupore on the future competence of visual artists found that the everyday work of artists, exercising the profession in practice, and the realities of the field were issues where artists wished for improvement in their studies (Herranen & al. 2013, 63).s

All in all, joint studies between campuses can create a support network that is sustained even after graduation. The still unpublished surveys by the Yli vaaran vuosien project reveal that professional artists' loneliness comes as a surprise to many graduates. Networking and active connections with colleagues were seen as factors that enable work and reduce loneliness. Social contacts are also necessary for coping at work, which has also emerged as one of the key challenges of professional artists in the project's student and alumni surveys. (Kahra

& Kuusimäki 2020.) Methods and the joint reflection of their execution may well be a pedagogical starting point for meetings between campuses, but in the best case scenario, students could interact between campuses without the guidance of a teacher.

The online course pilot between universities of applied sciences was also an initial test for creating a permanent network between universities of applied sciences that provide education in fine arts and for testing its possibilities for operation. The pilot indicated that online meetings are agile and that they have a feeling of immediacy, at least to some extent, even though participants are not in the same physical space. If technical aspects are in order, the web enables carrying out projects and meetings in an agile and light way at a low cost since no costs or time loss are caused by travelling, for example. The web makes it possible to share information and experiences more widely, which may create new communities. Creating a common network is one of the objectives of the project. This national network with its information banks and potential for further education will support newly graduated visual artists.

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