



WP3: REPORT ON STAKEHOLDER WORKSHOP I

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UJI, PROSPEKTIKER**

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Table of Contents

EXECUTIVE SUMMARY	2
1 TIME, PLACE AND ORGANIZATION	5
2 PARTICIPANTS	5
3 PURPOSE, AGENDA AND MAIN RESULTS	6
3.1 National themes and questions discussed on the workshops.....	7
3.2 Needed skills and competences.....	11
4 STAKEHOLDER NETWORK	15
5 IDEAS FOR CASES	17
6 RECOMMENDATIONS FROM PARTICIPANTS	18
7 ASSESSMENT OF WORKSHOP METHODOLOGIES	19
8 CONCLUSIONS	21
ANNEX A: WORKSHOP PROGRAMS	24



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EXECUTIVE SUMMARY

The first of the planned three KATCHe stakeholder workshops were held in all four countries in June 2017 with a total of 100 participants representing primarily the main KATCHe project target groups: Higher education, Business community and Knowledge centres. This is in line with the overall goals set for the project – 25 participants per workshop.

The workshop served several purposes:

- Presenting the KATCH_e project and inviting or confirming potential members for the national stakeholder network
- Getting inputs from different types of stakeholders on which skills and competences that KATCH_e should focus on developing or supporting
- Starting the engagement of the stakeholders in the project by having their inputs to the type of competences needed, activities to focus on, cases that could be relevant for students to work on, and other recommendations for the development of the training materials etc.

These purposes were covered in all countries, but in different ways as each country had a specific focus or theme for the workshop. An overview of the focus and organization of the workshops is shown below.

	Austria	Denmark	Portugal	Spain
Date	7 th June 2017	7 th June 2017	9 th June 2017	20 th June 2017
Duration	Half day	Half day	Half day	Half day
Location	Vienna	Aalborg	Aveiro	Castellón
Host	Technical University of Vienna	Aalborg University	University of Aveiro	University Jaume I
Organizer(s)	Technical University of Vienna; Austrian Institute of Ecology	Aalborg University; The Sustainable Business Network of Northern Jutland	University of Aveiro; LNEG	ITC; Prospektiker; University Jaume I
Total participants	27	21	30	22

Workshop themes	Status and potentials/barriers for CE in the two sectors	Circular business models in the furniture sector	Priority challenges, products and services for design for CE in the two sectors	Potentials and barriers for the transition towards CE in Spanish companies
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Overview of time, place, organization and themes for the workshops.

The workshops invited or confirmed potential members for the national stakeholder network. As part of planning and conducting the workshops, all national stakeholder network gained new members. By the end of June 2017, the stakeholder network had in total 124 members: 31 in Austria, 38 in Denmark, 29 in Portugal and 25 in Spain. All main target groups are covered in all countries. The goals of minimum 10 members and at least 3 members from each of the three main target groups per country have already been fulfilled. Still, the network will continue to grow and develop throughout the project.

The discussions during the workshops demonstrated that Circular Economy is still a not-so-familiar concept, and that some main challenges need to be addressed. But also that pioneers are working on developing new, circular business models and solutions.

Therefore, the training materials and tools need to support both the initial awareness raising and a more advanced approach. Moreover some of the main challenges like illustrating the business cases, overcoming multi-disciplinarity, working with different stakeholders, and developing effective communication should be addressed. The tools and training materials should be targeted towards company needs, meaning that they should be simple, easy to use and related to everyday practices.

Moreover, an important point was raised, stating that the need for competences varies depending both on the type of circular business model, the type of company, the value chain and the product/service in question. That said, some needed competences were highlighted:

- Understanding product-services from a life cycle perspective, both in relation to the materials etc. included, and in relation to the value chain including e.g. the cooperation with suppliers and customers, and creation of new types of partnerships
- Thorough knowledge on materials, logistics and sustainability impacts
- Ability to think and act within a multidisciplinary framework to break silo-thinking, promote cooperation and create new types of solutions
- Ability to support the shift in mindset and culture that is needed to develop circular economy

- Communication on several levels – from awareness raising (explaining the potentials and challenges in CE) to involving different stakeholders in developing and evaluating the solutions. This may also include the use of ICT.
- Ability to re-think and re-design business models as well as products-services

Within KATCHE, it should be discussed and clarified, which of these are core competences for designers.

Finally, the workshops created suggestions on specific cases or challenges for the students to work on. The following cases were mentioned, all of them highlighting the need for a practical and problem based learning approach:

- Analysis of alternative business models in the furniture sector
- How a chair would be designed from the perspective of different types of circular business models
- Reuse/redesign of discarded products taking life-cycle perspectives into account
- How to design a model for establishing collection and re-use of used furniture involving relevant stakeholders
- Design of a wooden beam to be used in renovation and restoration of old buildings

1 TIME, PLACE AND ORGANIZATION

The stakeholder workshops took place in June in all four countries. On the 7th in Austria and Denmark, on the 9th in Portugal, and on the 20th in Spain. The workshops were marketed through a variety of channels, typically linked to the organizing organizations, but also through other internet media and through personal invitation.

The Austrian half-day workshop was targeted towards both the furniture and the construction sector. It was organized by the Technical University of Vienna and the Austrian Institute of Ecology, and took place at the Technical University of Vienna. The Danish workshop, also a half-day event with a focus on the furniture sector, was organized by Aalborg University in cooperation with NBE, The Sustainable Business Network of Northern Jutland.

The half-day workshop reaching both the furniture and the construction sector in Portugal took place at Aveiro University and was organized by Aveiro University and LNEG. Finally, the half-day Spanish workshop was organized by ITC, Prospektiker and Jaume I University, and hosted by the latter.

The half-day, and not full day, workshops was chosen from an assessment that it would be easier to attract participants, if they were not to spend a full day plus travel-time.

2 PARTICIPANTS

All the workshops had the main KATCH_e categories as primary target groups, that is Business, Higher Education and Knowledge Centers, but the workshops were open to other categories as well. The total number of participants were 100, with 27 in Austria, 21 in Denmark, 30 in Portugal and 22 in Spain. Divided on stakeholder categories, the overview shows that Business community and researchers counted for more than half of the participants:

- Business community: 39 (AU: 8 + DK: 11 + PT: 8 + SP: 15)
- Researchers: 16 (AU: 7 + DK: 4 + PT: 7 + SP: 7)
- Professors: 8 (AU: 2 + DK: 2 + PT: 6 + SP: 1)

- Students: 8 (AU: 2 + DK: 1 + PT: 3 + SP: 5)
- Associations and knowledge centres: 8 (AU: 7 + DK: 1 + PT: 2 + SP: 1)
- Public authorities: 3 (AU: 1 + DK: 2 + PT: 0 + SP: 0)
- NGO's: 4 (AU: 0 + DK: 0 + PT: 4 + SP: 0)

	Austria	Denmark	Portugal	Spain
Date	7 th June 2017	7 th June 2017	9 th June 2017	20 th June 2017
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Total participants	27	21	30	22

3 PURPOSE, AGENDA AND MAIN RESULTS

The stakeholder workshop 1 served several purposes:

- Presenting the KATCH_e project and inviting or confirming potential members for the national stakeholder network
- Getting inputs from different types of stakeholders on which skills and competences that KATCH_e should focus on developing or supporting
- Starting the engagement of the stakeholders in the project by having their inputs to the type of competences needed, activities to focus on, cases that could be relevant for students to work on, and other recommendations for the development of the training materials etc.

These purposes were covered in all the workshops, but in different ways as each country had a specific focus or theme for the workshop.

3.1 National themes and questions discussed on the workshops

Austria

The overall idea was to discuss the status and potentials/barriers for implementing circular economy in the furniture and the construction sectors – and reflect on the need for competences. The following questions guided the discussions:

- How far are CE principles currently implemented in the building and furniture sector?
- How far are they implemented in your institution/company?
- Where do you see links for your institution/company?
- Which competences are missing?
- Which competences are needed in relation to the whole product life cycle?
- Who are the most relevant actors?

Some general conclusions from the discussion were, that both sectors are at the beginning of implementing circular economy. Circular Economy is perceived as an economic rather than an ecologic concept and it was more than once stated that purchase power triggers or hinders certain activities to reduce resources. Costs, high quality and security standards have been argued as main barriers for e.g. take back systems and it was questioned whether re-use could have adverse effects on the developments of innovations. High costs for logistics, cleaning, refurbishing steps etc. on the one side and low primary resource prices on the other.

At present, the building sector is mainly concerned with the legal framework by recycling the materials at the end of life. It still happens very little since it is not clear what do we get from CE and we do not know the advantages or the disadvantages. However, some initiatives do take place, for example repurposing of buildings and renting of e.g. formwork since customers can save money by renting. Another example pointed at replacement of damaged parts of beams instead of shifting the whole beam.

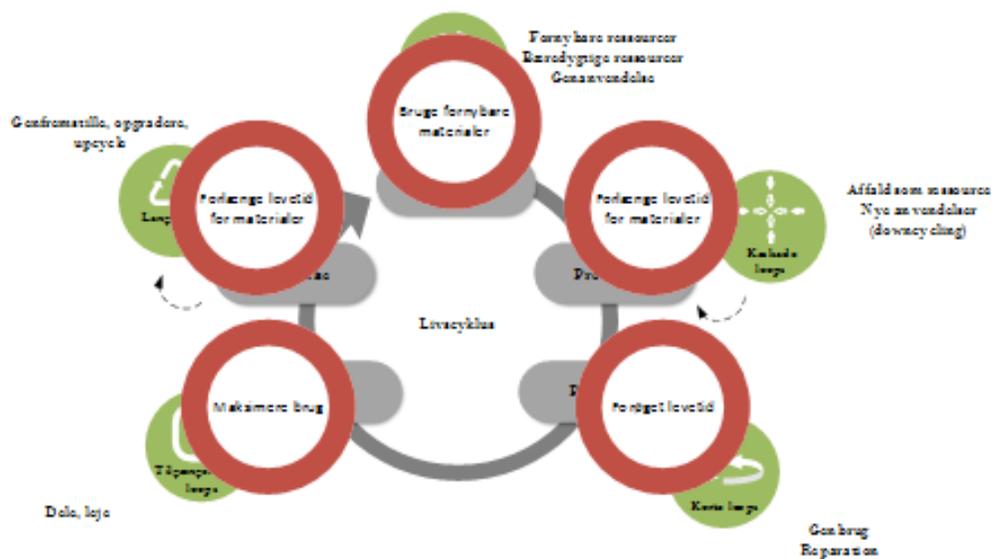
In the furniture sector, the focus is mainly on providing high-quality products with a long lifetime, applying recycling as the end-of-life strategy and focusing on a resource-efficient just-in-time production. When thinking about new business models, like furniture leasing or take-back logistics, it would change the whole business operation substantially, as this would coincide with the need for additional warehouses and distribution channels. However, it was stated that certain characteristics of the office furniture market would support new business models: most prominently having

customers with large quantities of office furniture. Secondly, the existence of a large market of reused office furniture (currently occupied by other players) confirms the existing demand. Economic pressure is seen as the most important driver for driving them towards business model innovation which is not high enough at the moment.

Fotos from the workshops: http://www.ecodesign.at/aktuelles/news_details/article/9337

Denmark

In Denmark, the theme was “Circular business models in the furniture sector, and the related need for competences”. Different types of circular business models related to the furniture sector and the challenges related to design, business development and sustainability in these models were presented and discussed. CE business models are applied in the Danish furniture sector, but are still far from mainstream. However, the trend is growing. The figure below (in Danish) illustrates the link between life cycle stages (grey), potential circular business models (green) and relevant issues to be considered in relation to these models (red circles).



The overview of business models were exemplified by companies actually working with some of these models. The discussions served as an appetizer to the group work, where the participants had to prioritize the need for competences in relation to the different business models. The results of the group work is presented in section 3.2.

Portugal

The Portuguese workshop raised the questions “What are the priority challenges, products and services for design for the Circular Economy in the construction and furniture sectors? And what are the needs in terms of skills and training for the design and development teams?”

The summarized answers to the first question are:

CHALLENGES:

1. Awareness raising: it is necessary to invest in the dissemination and education to promote change in mindset and corporate culture;
2. Economic Viability: it is necessary to present the arguments that show that the transition to CE is economically advantageous;
3. Design should question the origins of products and focus on user satisfaction in a more efficient way, for example, developing for durability, minimizing waste and promoting recycling and recovery services;
4. To articulate EU's policies and regulations with global competition – how to make companies more competitive and simultaneously make the economy more circular?
5. How to reconcile the product durability strategy with the technological evolution, innovation, fashion and energy efficiency?
6. Taking into account that one of the ways to circularity in construction is the differentiated use of deconstruction products and materials, how to manage transport of those products and materials in a cost-effective way? In other words, it is necessary to close the geographical gap between the deconstruction process o the product refurbishing process;
7. Another way to CE in the construction sector is modular building – how to implement it in existing buildings?
8. How to communicate and implement CE principles and strategies in very small, traditional, family businesses, which are resistant to change? This applies e.g. to the furniture sector in Paços de Ferreira, Portugal, where some 3000 furniture companies exist.
9. One of the main challenges is cultural, namely business culture.

PRODUCTS:

1. Floors and wall coverings, especially agglomerates;
2. Promotion of national products that have been replaced, such as native trees;
3. Creating a label: highlighting the value added to products that have the circular economy as a basis;

4. Products made of agglomerated wood or fibers [or cork] are a problem for circularity. To replace the conventional adhesives by biodegradable ones impacts negatively the product durability;
5. Construction products that are integrated in infrastructure. For instance, the design of water closets devices is conditioned by several factors – the design of the toilet itself, the water supply system, etc. .
6. Cement, plaster and mortar
7. Multi-layer and multi-material products

SERVICES:

1. Consulting service to articulate contacts between companies, consumers and researchers, to develop business models, valuing products at the end of life;
2. Distribution services of non-toxic by-products for other uses / applications by different producers;
3. Widespread maintenance, repair and refurbishment services;
4. Result-oriented product-service systems (such as the Interface carpet example);
5. Reverse logistic systems

OPPORTUNITIES (extra result of the debate):

1. Rethink the city. Now there is this concept of ephemeral city. We need cities that are more flexible and adaptable to more dynamic societies, with new demographic structures, including migrations, new technologies, etc;
2. Revisit traditional building methods that were more in accordance to CE.

Spain

In Spain, the workshop aimed at discussing circular economy, the potentials and barriers for the transition towards circularity in Spanish companies and the related need for competences. The workshop was open and not restricted to a specific sector.

In smaller groups, the following 5 questions were discussed and prioritized:

1. Which options do you think that would make companies work in a more circular way? Out of 22 included potential drivers, the top priorities were:
 - Self diagnosis
 - Business policy
 - Improvement of internal communication
 - Reduce waste
 - Derivative-product incentives
 - Training

2. What methods and tools are good to implement circular options in companies?
21 tools/methods were prioritized, and the most favoured one were:
 - Application of sustainable criteria
 - Ecodesign
 - LCA
 - Environmental marketing
 - Cradle to cradle
3. Which barriers and difficulties do you find to implement circular options in companies? 16 barriers and difficulties were listed, and the most significant barriers were:
 - High investments
 - Support of public authorities
 - Low cost culture
 - Lack of training
 - Lack of incentives
4. What are the ways to encourage the transition to Circular Economy? Of the 16 listed ways to encourage, the top five were:
 - Tax incentives
 - Legal obligation
 - Linear economic penalty
 - Remove legal barriers
 - Effective communication
5. Which type of training needs are needed to facilitate the implementation of Circular Economy? Practical, realistic, transversal and easy to apply training hold the top priorities of the 21 mentioned, and this is further discussed in section 3.2.

3.2 Needed skills and competences

Austria

The goal of the workshop was to introduce the concept of a CE and current projects related to it, and reflect upon the opportunities within one's business sector. The workshop was relatively input-focused (two out of three hours were occupied with presentations) and the time to discuss the competences needed within a CE was not sufficiently given.

Furthermore, one of the main realisations from the workshop was that at the moment there is not a sufficient knowledge base to address the question of competences in a CE, as the concept is not that well understood yet.

Still, as the business representatives talked about realised and planned projects related to CE-principles (such as furniture reuse, renting of formwork elements) they mentioned that currently few case studies exist which could serve as a model.

Therefore, general competences on what a CE implies, and information on how companies are fulfilling its potentials (case studies) are much needed.

Denmark

The Danish workshop participants produced an initial overview of the significant competences needed for different circular business model. The result is shown in the overview:

Business model	Prioritized competences
1. Take-back and upgrading of furniture (new paint, laquer, repair, etc.). The furniture is returned to the market with the same function and use as before	Sustainable materials, Product design supporting repair and upgrading Shift in mindset and organization to value repair instead of producing new furniture Cooperation and innovation to create value in the value chain, Maybe need for new suppliers and partners (fx social enterprises, which may lead to P-P solutions). Customer base may change. Different types of values. Digital solutions for marketing and story-telling.
2. Short-term hiring of furniture (fx beds for babies)	Materials and design for durability and robustness. Value creation with focus on changing the user behaviour. Business model and market development should support a behavioral change. Use of IT solutions for easy access to booking and delivering of the furniture Storytelling to support the rationale inhiring oinstead of buying.
3. Service systems with maintenance of furniture, fx on hotels	Understanding user behaviour, and involving the customers in clarifying their service needs. The company is the "operator" and should guide the discussions since the customer doesn't know all the possibilities.

	<p>Design of products and especially services with focus on designing the products to allow for replacement of worn out or damaged parts.</p> <p>Design of business models and systems will require a new way of thinking and organizing the cooperation with the customer. To secure value creation throughout the value chain, it would be important to have a long-term perspective in the cooperation, since there might be winners and losers in the short term. Therefore, it is not enough to understand the value creation, you should also be able to explain and co-create it with others.</p> <p>Understanding the technological potentials, eg service on-demand.</p> <p>Private-public partnership might be relevant. If the model is public, the authority becomes a market driver.</p> <p>Cooperation across professional disciplines should cover more than environmental competences, also business: service and sale.</p> <p>Dealing with complexity and dilemmas.</p>
<p>4. Furniture that are designed to develop with the user, fx beds that grow with the children</p>	<p>Not discussed</p>
<p>5. Furniture made from discarded products, incl. old furniture</p>	<p>Knowledge on materials and how they can be designed into new, attractive products.</p> <p>The new products should be designed from a Life Cycle approach, eg considering how they can be re-used or recycled – continue the circles.</p> <p>Understanding value creation – what is the value build into the old furniture, can it be maintained and further developed?</p> <p>Cooperation in the value chain and establishing partnerships become important to secure the delivery of old products and selling the new ones. How do they influence the market?</p>
<p>6. Furniture as a service – the customers buy the functionality/acces, not the</p>	<p>Understanding user behaviour is essential. Create feedback mechanisms to continuously design better PSS</p>

furniture – fx learning environments in schools	<p>This calls for new, innovative business models that will challenge the traditional way of creating value and cooperating throughout the value chain.</p> <p>Delicate economic balance for a company in the transition phase.</p> <p>Public-private partnerships and B2B relations may serve as supporters for the new markets for service solutions.</p> <p>Digital solutions will be the core in getting access to the service – and to tell the good stories to change the consumers' mindset.</p>
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Portugal

The Portuguese workshop pointed at the following skills and competences:

1. Training for the development of products and services with special relevance to the design options at all stages of the life cycle: focus on materials, logistics processes and environmental impacts;
2. Interaction with companies: visits to companies for students to structure knowledge based on practical case studies as well as participation of companies in the development of studies and projects in universities;
3. Multidisciplinary curricular units, transversal to the topics of interest;
4. Designers need more training in materials and substitute materials;
5. For construction products: designers need training on the use phase, not only by the client or consumer, but also the installer (someone noted that without this competence such a person would not be a designer, but anyway...);
6. Life cycle thinking to understand the impacts of the design options in all phases of the life cycle
7. Tools and methodologies to integrate Circular economy and sustainability in practice

Spain

The group discussion on training needs, lead to a list of 21 proposals. In the order of priority, they were:

- Multidisciplinary training
- Practical training at schools
- Easy methods

- Companies training
- Transversal training
- Eco-social prestige
- Cultural
- Training for citizenship
- Train for the trainers (management issues)
- Media
- Training in non-CE dangers
- Unanimous in all political parties
- Free training
- Workshops
- Business consulting
- End of life training
- Real Practical Cases
- Open software
- Specific training
- Meetings
- Indicative guides

4 STAKEHOLDER NETWORK

The workshops led to new members and/or to confirming potential members. By the end of June 2017, the stakeholder network hold 105 members, thus exceeding the minimum expected number of 40 members. Distribution per country was 29 in Portugal, 31 in Austria, 19 in Denmark and 25 in Spain. An overview of the national stakeholder network is presented below.

Austria

The workshop was the initiation of the network, as with it, the aim of the project and the role of the stakeholders became clear for the participants. Below is an overview of the 31 members of the network:

Higher education - 11 members

Business community – 8 members

Knowledge centers - 11 members

Others – 1 member

Denmark

During the workshop and the following days, 7 persons signed in for the stakeholder

network. By the end of June 2017, the Danish stakeholder network has 19 members in the following categories:

Higher education - 4 members

Business community – 9 members

Knowledge centers - 2 members

Others – 4 members

Portugal

In Portugal relevant stakeholders were identified before the workshop:

Higher education - 15 potential members

Business community – 40 potential members

Knowledge centers 13 potential members

Others – 15 potential members

Total 83 members from 69 organizations

In June, the formal composition of the network, including only the stakeholders that have stated that they want to be part of the KATCH_e stakeholders network in Portugal were as following:

Higher education - 7 members

Business community – 12 members

Knowledge centers - 3 members

Others – 7 members

Spain

Higher education – 3 members

Business community – 14 members

Knowledge centers – 6 members

Others – 2 members

COMPOSITION OF THE STAKEHOLDERS NETWORKS (END OF JUNE 2017)

	Austria	Denmark	Portugal	Spain	Total
Higher education	11	14	8	3	36
Business community	8	11	12	14	45
Knowledge centres	11	8	3	6	28
Others	1	5	7	2	15
Total	31	38	30	25	124

5 IDEAS FOR CASES

During the workshops, the participants were asked for ideas for potential cases that could be of use for students to work on. The following ideas came up:

Alternative business models in the furniture sector, 2 interested companies (Austria)

Possible topics could be the identification of relevant business models, e.g. leasing of office furniture, their cost-effectiveness and their environmental performance in relation to the current model.

Circularity in the supply chain, construction company (Austria)

integration of companies within their supply chain and development of a concept for circularity together.

The Chair (Denmark)

How should e.g. a chair be designed to fit into different circular business models? What becomes significant, are there dilemmas or different requirements to fix durability, separation of materials, possibilities to replace parts of the chair, etc.

Reuse/recycling of discarded waste containers (Denmark)

In Aalborg, the municipality has changed their old metal-based waste management containers with a paper bag inside to a new system that allows for separation of waste streams. Now, there are thousands of the metal containers on stock, and the municipality would like to have suggestions for reuse or recycling.

Cooperation on collection of used furniture (Denmark)

How to establish a partnership including second-hand shops on collecting and refurbishing used furniture.

Development of an innovative wooden beam (Portugal)

One stakeholder, who is a teacher and architect working mainly in the renovation of buildings, mentioned that a good product to be developed, and which we consider a need, is the development of an innovative wooden beam designed for the application in renovation and restoration of old and historical buildings.

Spain

No specific suggestions for cases were given, but the workshop participants suggested initiatives that can make companies work in a more circular way such as self diagnosis, business policy, improvement of internal communication, reduction of waste, all of them could be translated to practical case studies that could be part of the training materials. The same goes for the tools that are currently being used such as the application of sustainable criteria, ecodesign, LCA, environmental marketing, cradle to cradle.

6 RECOMMENDATIONS FROM PARTICIPANTS

Please give an overview of the recommendations for our learning approaches, training materials, etc. that you got from the workshop (This part will go into our overview of stakeholder recommendations that we will consider including in the project)

Austria

Within a life cycle perspective, next to the focus on resource efficiency it is also very important to have a focus on the costs and on the customer perspective.

The differences of resource cycles in regard to value retention is not well understood, e.g. whether/why reuse is better than recycling which is better than incineration with energy recovery. Therefore, within the training materials an effort should be made to highlight the quality of resource cycles and communicate measures that foster "inner circles".

Denmark

Our materials and training approach should support competences that are recognizable and relevant in traditional, linear business models. But we should emphasize where the differences are, when looking into the circular models.

Beware that the needed competences may vary depending on the type of companies. For example, a small start-up company will need other (types of) competences than a large, well-established company. The latter may need more focus on de-learning existing

practices and ways of thinking before they will be able to incorporate new competences and practices.

We should, if possible, develop or support training activities that can be used across different disciplines in a company. Where are the critical points and knowledge for co-developing and implementing circular solutions?

Portugal

Training for the development of products and services with special relevance to the design options at all stages of the life cycle: focus on materials, logistics processes and environmental impacts.

Interaction with companies: visits to companies for students to structure knowledge based on practical case studies as well as participation of companies in the development of studies and projects in universities.

Multidisciplinary curricular units, transversal to the topics of interest.

Encourage students / trainees to experience CE in their daily lives, outside their professional activity.

Promote collaborations where teachers specialized in relevant areas share their knowledge for general education.

Structure the knowhow based on practical case studies: recognizing experiences and building a narrative.

Spain

According to the workshop participants our training materials should be aimed at overcoming the fear of change, escaping from consumism and the low cost culture. There is a lack of practical examples and case studies that we should try to fix as well as effective communication.

As for the approaches and methodologies, we could use cross training, practical training at schools, easy methods, training of employees, horizontal training...

7 ASSESSMENT OF WORKSHOP METHODOLOGIES

Some of the methodologies applied for group discussions and stakeholder engagement may be relevant to include or further develop for use in the KATCH-e training materials. The following should be considered:

Austria

In general the approach including three blocks (internal presentations, external presentations and group discussion) followed by networking (including buffet and drinks) worked very well and the guests stayed approx. 2 hours longer for networking activities.

The group discussions were guided by six basic questions which could be used optionally by the discussion leaders and weren't followed rigorously.

The following feedback can be highlighted:

- In future workshops it's probably better to focus on one sector. The furniture and the building sector differ due to their products and stakeholders quite a lot and it was not easy to set up a program which satisfies both sectors. The next workshop - held within the framework of a building fair – will focus on the construction sector.
- The second comment refers to the time frame. In order to have an attractive workshop program we invited a couple of external speakers, but then the time for the discussion was too short for the prepared questions. Meaning the remaining 45 minutes for the group discussions was too short and we could have easily discussed an additional hour. As most of the participants were really motivated, the discussions went on after the workshop during the following networking activity. In general, a good balance between an attractive program and having enough time to discuss should be strived for.

Denmark

The discussions in the groups were based on competence cards developed from the inputs gained through interviews before the workshop. In most groups, the cards supported the discussions as it gave the group members something specific to consider instead of having – in a very short time – to develop their own understandings. These were then added if needed.

However, in one of the groups, the competence cards sort of blocked the discussions as people started discussing how to understand the mentioned competences. These discussions were also fruitful and made it clear that a given competence is open for interpretation, unless it is very specifically defined.

The competence cards were a kind of “design game” to facilitate the discussions and priorities in a complex area and the model may be used in a training setting as well.

Portugal

The workshop promoted a multidisciplinary teamwork that obtained interesting results due to the different contributions brought and by allowing a more comprehensive discussion between the participants.

This multidisciplinary collaboration will be proposed in the implementation of the curricular unit to be created at Aveiro University. This workshop was a good example of balancing the presentations with breakout groups – 50/50 – that could be reflected in our training modules by a proper balance between theoretical and practical modules.

Spain

Considering all facts, we believe that the applied methodology for group discussions would be relevant to include in future workshops or trainings. The singularities of the methodology were 2 in our opinion:

- 1) The warming up through brain exercises that allowed the participants to relax, laugh and therefore afterwards they were ready for debate and discussion.
- 2) The five groups worked with the same questions during the first round, and then in the second round, they got the chance to find out about the others' conclusions and they had to assess them, grading the relevance of each of the findings.

The methodology allowed a lot of interaction and it was very interesting to receive the inputs of the other groups about the same questions you had previously been thinking about. However, it was very time consuming so this methodology should be reviewed in order to spend less time evaluating each others answers to the questions.

8 CONCLUSIONS

Half-day stakeholder workshops took place during June 2017 in all four countries. A total of 106 participants joined the workshops (27 in Austria, 21 in Denmark, 31 in Portugal and 28 in Spain) representing primarily the main KATCHe project target groups: Higher education, Business community and Knowledge centres. This is in line with the overall goals set for the project – 25 participants per workshop.

The workshop served a number of purposes. The first was to present the KATCH_e project and support setting circular economy on the agendas in the furniture and the construction sectors in the four countries. The discussions during the workshops demonstrated that Circular Economy is still a not-so-familiar concept, and that some

main challenges need to be addressed. But also that pioneers are working on developing new, circular business models and solutions.

Therefore, the training materials and tools need to support both the initial awareness raising and a more advanced approach. Moreover some of the main challenges like illustrating the business cases, overcoming multi-disciplinarity, working with different stakeholders, and developing effective communication should be addressed. The tools and training materials should be targeted towards company needs, meaning that they should be simple, easy to use and related to everyday practices.

A second purpose of the workshops was to invite or confirm potential members for the national stakeholder network. As part of planning and conducting the workshops, all national stakeholder network gained new members. By the end of June 2017, the stakeholder network had 31 members in Austria, 20 in Denmark, 30 in Portugal and 25 in Spain. All main target groups are covered in all countries. The goals of minimum 10 members and at least 3 members from each of the three main target groups have already been fulfilled. Still, the network will continue to grow and develop throughout the project.

Moreover, the workshops should have inputs and recommendations from different types of stakeholders on which skills and competences that KATCH_e should focus on.

An important point raised here, was that the need for competences depends both on the type of circular business model, the type of company, the value chain and the product/service in question. That said, some needed competences were highlighted:

- Understanding product-services from a life cycle perspective, both in relation to the materials etc. included, and in relation to the value chain including e.g. the cooperation with suppliers and customers, and creation of new types of partnerships
- Thorough knowledge on materials, logistics and sustainability impacts
- Ability to think and act within a multidisciplinary framework to break silo-thinking, promote cooperation and create new types of solutions
- Ability to support the shift in mindset and culture that is needed to develop circular economy
- Communication on several levels – from awareness raising (explaining the potentials and challenges in CE) to involving different stakeholders in developing and evaluating the solutions. This may also include the use of ICT.
- Ability to re-think and re-design business models as well as products-services

Within KATCH_e, it should be discussed and clarified, which of these are core competences for designers.

Finally, the workshops should initiate the engagement of the stakeholders in the project by having their recommendations on the content and focus of the training materials as presented above, but also suggestions on specific cases or challenges for the students to work on. The following cases were mentioned, all of them highlighting the need for a practical and problem based learning approach:

- Analysis of alternative business models in the furniture sector
- How a chair would be designed from the perspective of different types of circular business models
- Reuse/redesign of discarded products taking life-cycle perspectives into account
- How to design a model for establishing collection and re-use of used furniture involving relevant stakeholders
- Design of a wooden beam to be used in renovation and restoration of old buildings

ANNEX A: WORKSHOP PROGRAMS

Invitation and program for the Austrian workshop:

Einladung zum 1.

 Workshop

Think ahead:
 Circular Economy
 als Herausforderung der
 Bau- und Möbelbranche

Mi, 7. Juni 2017, 16:00 -19:00

Kontaktraum TU Wien
 Gebäudetrakt CD, 6. OG
 Gußhausstraße 27-29, 1040 Wien

Infos unter
www.ecology.at/katche.htm
www.linkedin.com/groups/8597178
www.ecodesign.at




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- o Austausch mit ExpertInnen aus Planung, Architektur, Bauingenieurwesen, Design, Wirtschaft und Ressourcenmanagement.
- o Ansatzpunkte von Kreislaufwirtschaft an Hochschulen und in Unternehmen.
- o Auftakt zum Kooperations- und Netzwerkaufbau.

16:00 - 16:45 - Circular Economy (CE) und EU Projekt KATCH_e

Begrüßung und Einführung	<i>Rainer Pammlinger</i> (TU Wien, ECODESIGN)
Circular Economy – Warum, Was und Wie?	<i>Stephan Schmidt</i> (TU Wien, ECODESIGN)
Projektvorstellung KATCH_e	<i>Maria Kalleitner-Huber</i> (Österr. Ökologie-Institut)
CE im Lehrangebot und Ergebnisse aus den Interviews	<i>Julia Lindenthal</i> (Österr. Ökologie-Institut)

16:45 - 17:45 – Externe ExpertInnen zu Erfahrungen, Potenzialen und Barrieren

Produktverbesserungen im Sinn der Circular Economy	<i>Wolfgang Wimmer</i> (TU Wien, ECODESIGN)
BauKarussell – Re-Use ganzer Bauteile und verwertungsorientierter Rückbau	<i>Markus Meissner</i> (Pulswerk GmbH)
HarvestMap – Material-Austausch-Plattform für Bauprodukte	<i>Andrea Kessler, Susanne Dethlefsen</i> (HarvestMap)
RepaNet – Arbeitsplätze schaffen durch ReUse und Reparaturnetzwerk Österreich	<i>Matthias Neitsch</i> (RepaNet Österreich)
Wrap-up und Fragen an die Vortragenden	<i>Moderation Markus Meissner</i> (Pulswerk GmbH)

17:45 - 18:00 - Pause

18:00 - 19:00 - Arbeitsgruppen zu Anknüpfungspunkten, Kompetenzaufbau und Ausbildungsbedarf

Ab 19:00 - Netzwerken, Buffet von Rita Bringt's

Invitation and program for the Danish workshop:



Cirkulære forretningsmodeller i møbelbranchen
- Workshop om forskellige forretningsmodeller og relaterede kompetencebehov

Program for dagen:

9.00 – 9.15	Kaffe og rundstykker
9.15 – 9.35	Velkomst og introduktion til cirkulære forretningsmodeller v/ Mette Mosgaard, AAU
9.35 – 9.50	Eksempler på cirkulære forretningsmodeller i møbelbranchen v/ Højer Møbler og Råt & Godt
	Pause
10.00 – 10.40	Diskussion i mindre grupper (del I) Forskellige typer cirkulære forretningsmodeller (fx reparation, leasing, genbrug og produkt-service systemer): - Hvad er kernen i disse forretningsmodeller, hvilke udfordringer er centrale og hvilken viden og kompetencer er nødvendige for at realisere modellen?
10.45 – 11.00	Introduktion til et europæiske projekt om cirkulære forretningsmodeller i møbelbranchen (KATCH_e). Præsentation af kortlægningen af kompetencebehov for cirkulære forretningsmodeller herunder eksisterende metoder og redskaber v/ Kirsten Schmidt, AAU
11.00 – 11.15	Åben diskussion. Hvilke udfordringer bør studerende og designere i virksomheder kunne håndtere for at understøtte cirkulære forretningsmodeller? Hvilke kompetencer bør man fokusere på?
	Pause
11.25 – 11.50	Gruppediskussioner ud fra de cirkulære forretningsmodeller (del II): Hvilke cases og udfordringer vil være egnede som udfordringer til studerende til at udvikle løsningsmodeller til (og derved få relevante kompetencer)? Hvilke aktører og interessenter bør tænkes med ind i disse cases? Vil I selv være cases?
11.50 – 12.00	Præsentation af KATCH_e projektets stakeholder netværk – igangværende og planlagte aktiviteter, hvem er med og hvordan bliver man medlem af netværket. v/ Kirsten Schmidt, AAU
12.00 – 12.10	Afrunding på dagen v/ Mette Mosgaard, AAU

Workshoppen finder sted på AAU, Nybrogade 6, lokale 1.133, 9000 Aalborg. Deltagelse er gratis, og tilmelding foregår via NBEs hjemmeside: <https://nben.dk/2017/04/cirkulaere-forretningsmodeller-i-moebelbranchen>



KATCH-e Workshoppen indgår i det europæiske KATCH_e projekt

Invitation and program for the Portuguese workshop:

I Workshop Nacional

Design para a Economia Circular



Knowledge Alliance on Product-Service Development towards
Circular Economy and Sustainability in Higher Education

9 de junho

Universidade de Aveiro

Departamento de Economia,
Gestão, Engenharia Industrial
e Turismo

Sala 10.1.11

Para mais informações:
ana.afonso@ua.pt



14.30 Boas vindas:
Apresentação da Universidade de Aveiro e da Plataforma Tecnológica da Floresta

*Gonçalo Paiva Dias, Vice-Reitor UA e
Paulo Cachim, PTFloresta - UA*

15.00 O projeto KATCH_e, resultados já obtidos e objetivos do workshop

*Cristina Sousa Rocha,
responsável do projeto, LNEG*

15.30 Apresentação dos participantes

16.00 Sessão de trabalho para debater questões fundamentais para o desenvolvimento do projeto:

a) *Quais os desafios, produtos e serviços prioritários para o design para a EC nos setores da construção e mobiliário?*

b) *Quais as necessidades ao nível das competências e da formação para as equipas de design e desenvolvimento?*

17.00 A rede de stakeholders do projeto KATCH_e

David Camocho, LNEG

17.30 Encerramento da sessão

Teresa Franqueira, UA

Invitation and program for the Spanish workshop:



JUN
20

Workshop sobre economía circular. Proyecto europeo Katch-e

de UJI - ITC

Gratis



Ventas terminadas

[DETALLE](#)

DESCRIPCIÓN

Workshop Nacional del proyecto KATCH_e donde a través de una serie de actividades participativas pretendemos identificar oportunidades y barreras para implementar la circularidad en empresas del sector de la construcción y del mueble. Asimismo también pretendemos definir necesidades de formación en la materia que ayuden a las empresas en este nuevo reto que tiene la economía mundial.

El registro se realizará por riguroso orden de inscripción hasta cubrir las 20 plazas disponibles.

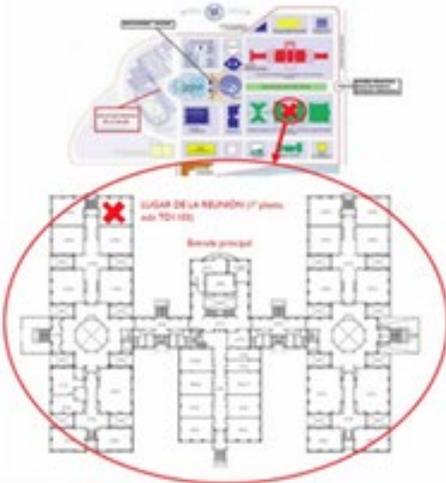
Programa

11:00 Braincast/temas
11:30 Proyecto KATCH_e
11:45 Sesión creativa

- Modelos de negocio circulares
- Eficiencia de recursos
- Diseño circular

13:00 Puesta en común y cierre

Mapa de ubicación



FECHA Y HORA

mar., 20 de junio de 2017
11:00 – 13:00 CEST
[Añadir al calendario](#)

UBICACIÓN

Universidad Jaume I Edificio TD, sala 1103
Av / Vicente Sos Baynat s/n
12071 Castellón
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