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European Union
European Regional
Development Fund

I-CARE-SMART

Toolbox for Senior and Business Engagement

The Story behind the Project

The EU-funded project **I-CARE-SMART** is part of the trend to promote active living as well as targeted products and services for seniors.

I-CARE-SMART aims to bring innovation closer to senior citizens by introducing innovative products and services. The active involvement of users helps to develop better products for and with seniors and boost the silver economy.

In this toolbox you can find inspiration on how to engage seniors and businesses:

Toolbox for Senior Engagement: Pages   1-49

Toolbox for Business Engagement: Pages 50-80

The first part is about methods for user involvement.
The second part deals with methods for business engagement.

In the **I-CARE-SMART** project, project partners in 6 regions implemented co-creation pilot actions. Find out more about our learnings and best practices by checking the toolboxes.

I.
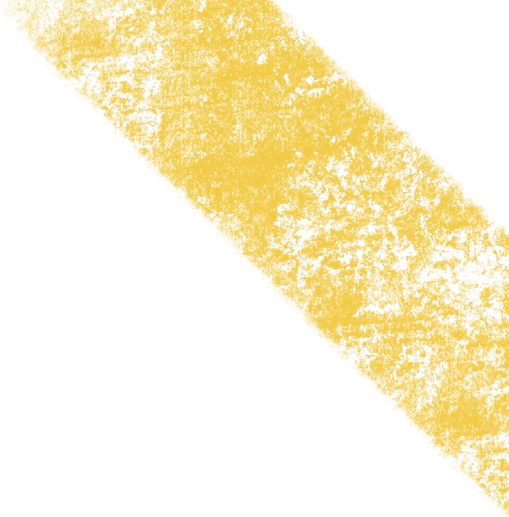# Toolbox for Senior Engagement

Index

LEARNINGS

- Provide some kind of incentives for the participants to say thank you and value their time.

- Aim to engage with diverse seniors and get different perspectives (age, gender, physical conditions), find partners (other organizations) who can help you with that.

- Give the seniors enough time to talk.

- Listen and look carefully.

- Try not only to prove your assumptions, but find out something unexpected.

- Plan enough time to prepare your timeline and methods before starting the actual process, to identify the common goal of the co-creation process.

- Getting to know each other as a team – that improves the way you work together.

- Stay flexible and open – not everything will go according to plan ;)

- Face-to-face meetings cannot be replaced by online meetings.

FIRST STEPS FOR CO-CREATION
WITH SENIORS

- When starting a co-creation process, seniors should not only test your product or service, they should also have the opportunity to provide their expertise and ideas throughout the whole development process.

- Installing a senior advisory board is valuable to set a systematic framework for user engagement. On the one hand, it is easier to organize co-creation sessions with an already formed group. On the other hand, we also recommend asking diverse people to get more perspectives. With our experience it worked well to install a senior advisory board for longer projects and plan sessions with different seniors as well.

- Clarify what the goal is, what the information is used for, what the framework is, what is happening with the results.

- Provide clear and simple information in a barrier free language. If you talk to seniors on the phone, double check if everything is clear. If you need to send written information ask if email is okay and if not, send it on paper or ask which way works best for that person. Even if you have written notes, it may be helpful to verbalize the information too. If you are not sure, ask the person if there's a different way you can provide the information that would be helpful.

- Give feedback at the end and invite the seniors to a project closing event to report on the results and celebrate together.

- Provide clear information about time and place you will meet, methods, material, etc. Talk on the phone at least once.

- Provide enough breaks and beverages.

- Honour the shared time and experience. Think about how you can do this: Providing meals, goodies, vouchers, providing transportation, organising events (e.g. theatre) etc. Say "Thank you".

- Keep in mind that everything is always voluntary for the participants: stay flexible throughout each stage of the process.

USING ONLINE TOOLS WITH SENIORS

- Seniors tend to prefer face-to-face communication – Keep that in mind!

- In general, seniors tend to have fewer digital experiences and therefore less marked digital skills. If you are planning usability workshops with seniors you should remember to provide adequate information and didactic methods. In general, that means avoiding difficult technical terminology and English language, explaining everything from the beginning and especially explaining common symbols/ functions, having a lot of time for questions and offering enough time to let all people try out the tool. This also means that a group has to be small to provide enough time for support and feedback. Furthermore, the moderators should take care that if they use written materials or a power point presentation in the sessions, they should make sure that the letters are not too small, and an easy language and pictures are used.

- If you plan to use digital communication tools, you should also try to connect with them through non-digital communication, e.g call while entering the online room together.

- Give support on how to use online tools (e.g. a handbook) & plan enough time for the preparation.

- To avoid problems during the workshop, test the online tool and your design in the days before and together with them in a preparation check up.

PHASES OF CO-CREATING WITH SENIORS

Understanding
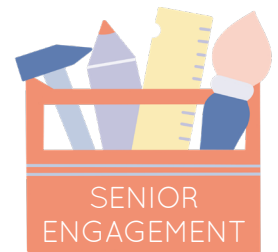
Conceptualizing

Testing

Evaluation
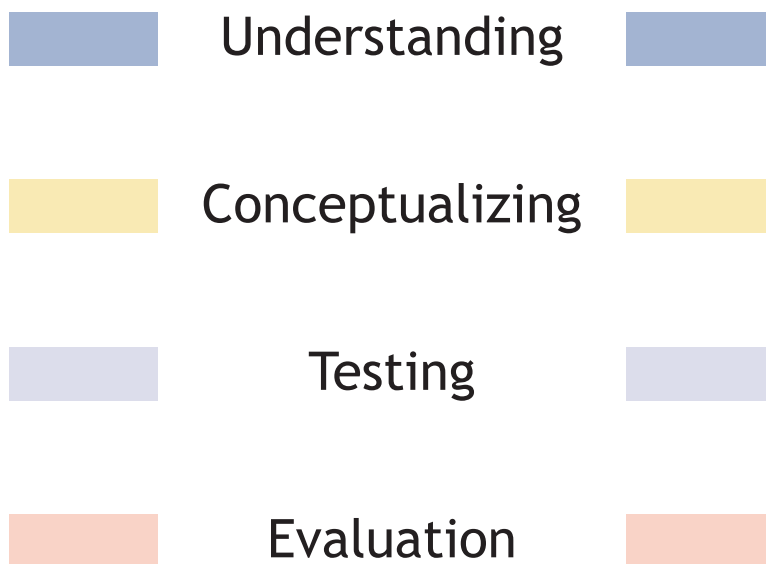
Understanding

During the phase of understanding it is all about an open approach to receive insights into the target group's everyday life, what they experience, what they like/dislike, where they struggle, what their needs are.

Typical methods in this phase are interviews, an observational method like shadowing, and awareness raising workshops for the developer team.

Understanding: Interviews

Description

Interviews are a great way to get insights into everyday life as well as personal life experiences. For example, if you are developing a fitness application, it is important to get a clear picture of their everyday lives and ask the users about daily routines.

Preparation

Once you have decided to use interviews to understand user experiences, you can start to work out who to interview and what to ask. Asking a diverse group of people in regard of gender, age, abilities, ethnicity etc. is very valuable to get many different perspectives – between 5-10 interviews. Try to focus on main topics that are most interesting for your process.
Then for each topic find open questions like: „What are your daily routines?"

Procedure

Provide a good atmosphere for the interviews, having a chat before you start the interview. During the interview, try to actively listen and if possible make notes throughout or directly afterwards.* For evaluation, clustering the answers and using quotes can be helpful.

*check out our template on the next page.

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Postscript Interview

– Read it before the interview, make notes during the
interview and write your notes directly after the interview

1. Observer:

2. Description of contact and invitation of the interviewees:

3. Place, date, time and duration of the interview:

4. Description of the person:

5. Description of spatial conditions, seating, atmosphere:

6. Description of the procedure with all observations that are not audible on tape. Pay attention to participants as well as the interviewer (who starts talking, postures, body language, eye contact, irritations):
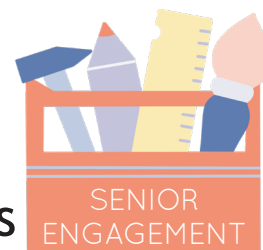
7. Which attitudes are noticeable?

8. Where do they show a lot of energy, where less?

9. How is the discussion structured?

10. Description of one's own feelings, thoughts, actions, action impulses (during, shortly before or after the observation):

11. Open notes:

12. Memos (any new ideas for the project):

«Sometimes I find it hard
to carry my shopping bags
home alone.»

Understanding: Round Tables/Focus Groups

Description

A round table/focus group is a form of discussion. Participants agree on a specific topic to discuss and debate. Each person has an equal right to participate, as illustrated by the idea of circular layout referred to in the term round table. A round table focusing on topics concerning active aging can be organized in communities (politics, in NGO´s, neighbourhood, start-up events, community events) to enable older people to share and actively shape their ideas about the future.

Preparation

Identify the topics you want to discuss and define clear roles concerning who is the moderator and who is the observer. Think about a diverse and suitable group for your discussion and invite between 8-10 people. Define a timeline and a structured questionnaire and prepare flipcharts or slides with the questions for the session. You can use the postscript templates from page 8-9 to structure your notes.

Procedure

If you choose to use audio recording to document the results, ask all participants for their consent with a written agreement to sign.* Support a welcoming atmosphere where people feel comfortable to share personal experiences. Provide food/drinks and a barrier-free environment. And try to be aware that every participant gets her/his time to talk (e.g. ask them clockwise).

*check out our template on the next page.

Interview Agreement

– between   Name Interviewer: _____

               and

               Name Interviewee: _____

1. **Participation of the interview** – The Participation in the interview is voluntary. Participants can stop the interview at any time. The data will be deleted after the project has expired.

2. **Purpose** – The interview takes place as part of the xy project.
    The project xy is about:

3. **Partner** – The responsible partner for this interview is:
    (fill in your organization and a responsible person)

4. **Mutual declaration of consent** – The interviewee agrees to the tape recording and to the evaluation of the interview. The responsible persons make sure that all collected data is kept strictly confidential. If other persons have access to the data, they will also be required to treat it with strict confidentiality. Personal data will be used exclusively within the project xy. The anonymous data can also be used for other purposes.

5. **Evaluation** – For evaluation purposes a protocol from the tape recording is made. In the protocol and evaluation all personal data (name, address, institutions, etc.) is anonymized.

6. **Publications** – The anonymous written protocol can be cited in excerpts in reports. Excerpts from the anonymized transcript can also be presented to the public in anonymized form.

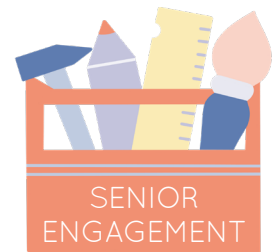| _____	_____	_____	_____
Place	Date	Interviewer	Interviewee

«I really like having my
cup of tea after my nap
and watching people
chatting.»

Understanding: Shadowing

Description

Watching and being a silent observer is a useful method to focus on how the target group and different users are interacting with others and the environment.

Preparation

Select the location and framework for your shadowing depending on the product/service you plan to adapt. For example if you have a project with a walking aid, the topic of mobility is the leading topic. Therefore, it is useful to observe public spaces like supermarkets, local farmers markets, tram stations, parks and their living environments at home and watch how the seniors behave. Be aware that you may have to ask for permission in advance.

Procedure

Write minutes within structured templates.* Focus on observations that are surprising to you and do not only confirm your own assumptions.

SHADOWING

I want to collect input from...

Where & When
LOCATION:
DATE:
TIME:

Who
PERSON SHADOWED:
AGE:
GENDER:
REASON FOR SHADOWING:

Key findings:

_____

_____

_____

_____

_____

_____

Behaviour/Disabilities
e.g. how do the seniors move? How do they feel?

Problems/Dislikes
e.g. What causes problems?

Use of the product
e.g. How are they using xy? How are they behaving on feedback from xy? ...

Problem solving
e.g. How are difficult situations resolved?

Likes
e.g. Which aspects work well?

Feeling Good
e.g. What makes seniors feel good?

Wishes/Needs
e.g. Can needs be identified?

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SHADOWING

I want to collect input from...

Where & When
LOCATION:
DATE:
TIME:

Who
PERSON SHADOWED:
AGE:
GENDER:
REASON FOR SHADOWING:

Key findings:

_____

_____

_____

_____

_____

_____

USER TEST OBSERVATION

Open notes/Quotes
e.g. user experience, ...
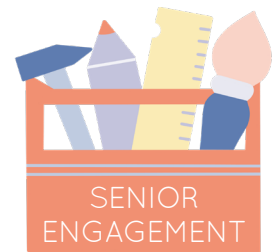
What did you observe which you found suprising?

Observation:
A woman carrying a pillow
in her rolling walker.

Understanding:

Awareness Raising Workshop

Description

The goal of an awareness raising workshop is seeing things from someone else´s perspective. Depending on the topic, you can think about ways of putting people in different shoes. A good tool e.g. is an ageing simulation suit or glasses that simulate different visual impairments.

Preparation

Define your focus and prepare the methods. If you are planning the workshop with a start-up invite the whole team and let them work in pairs. Organize at least 2 people to moderate the workshop. Try to think about simulating situations from daily life, e.g. moving around in a small bathroom or loading the dishwasher.

Procedure

Welcome the team to the workshop and explain the goal and the different tasks they will undertake (e.g. first task is to put on the aging simulation suit and take out dishes from the dishwasher). After the teams complete all the tasks, have a session to reflect their experiences. Ask about how it felt for them and if they can derive things from their experiences for their own product development (translating their emotions into the product).
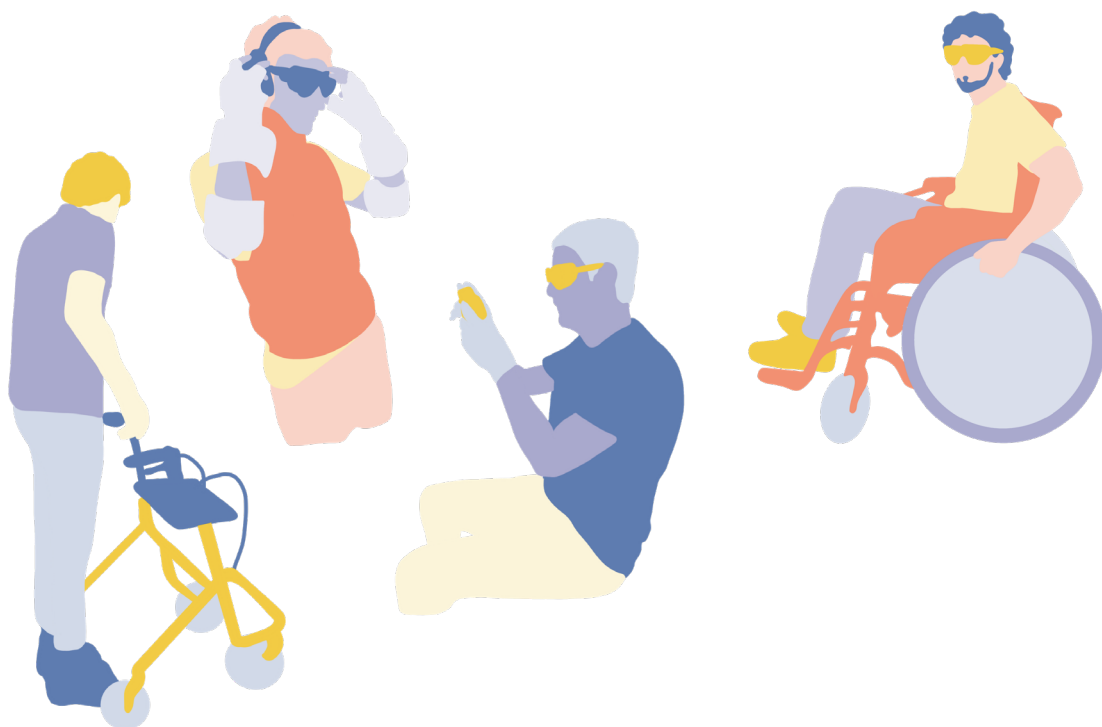
Awareness Raising Workshop.

Conceptualizing

If you have an insight on the target groups everyday life and how they feel in regard to a special topic (like technology, mobility, etc.), you can go on with a more narrow approach.

Now it is all about the details: What should the product/ service look like? What functionalities should it have? In this phase you can organize a setting in which the target group finds a good atmosphere to bring in their dreams and ideas.
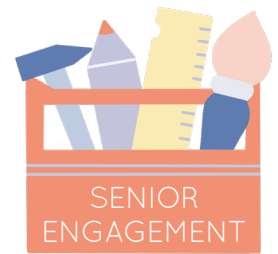
Conceptualizing: Dreaming Workshop (e.g with Design Thinking Methods)

Description

This kind of workshop invites the target group to share their ideas about "the xy product/service of their dreams". In this workshop everything can come up from crazy ideas to ideas that businesses can implement quickly.

Preparation

It can be very valuable to invite an interdisciplinary team (e.g. designers and care experts) and a diverse group of seniors (15-20 people). If you invite seniors with hearing/ vision impairment or mobility issues provide a setting that considers the different requirements.

Procedure

Welcome the group and explain the goal of the workshop. Have an ice breaking session in the beginning to create a nice atmosphere. If you are working with a big group of about 15-20 people, organize smaller groups and explain the tasks clearly (each group should be moderated).

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BEST PRACTICE DREAMING WORKSHOP
-Agenda

Agenda

9:00 - 9:30	- Icebreaking
9:30 - 11:00	- Developing Ideas
11:00 - 11:20	- Break
11:20 - 12:30	- Evaluating and Presenting Ideas

Leading question for the workshop:

What does an attractive xy look like for seniors who use it with joy and pride in everyday life?

BEST PRACTICE DREAMING WORKSHOP
-Icebreaking & Understanding

Starting the workshop by sharing perceptions of attractiveness and which products people use in everyday life is a great opportunity to break the ice and get to know a lot about people's habits and user experiences.

Each participant has time to think about the different questions and write it down on a post it. Afterwards everyone shares it in the small group and later a wrapping up all together.

UNDERSTANDING   Team 1

Attractive
means
to me
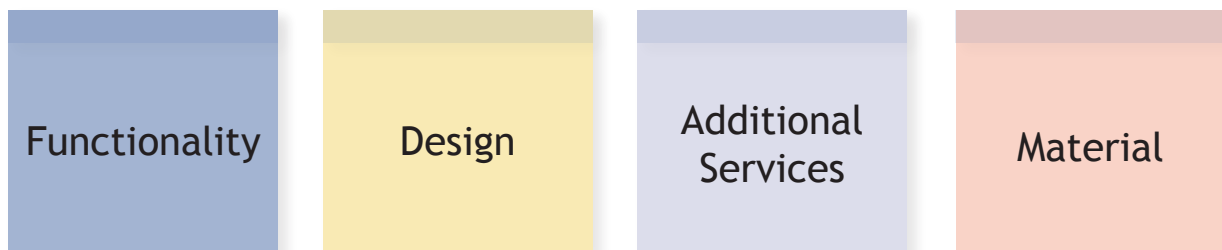
xy gives
me pride

In everyday
life I use xy
with pleasure

BEST PRACTICE DREAMING WORKSHOP
-Idea Development

Each group is collecting ideas about the 4 topics

Team 1

| Functionality | Design | Additional Services | Material |

1 Functionality
What can an xy do so that I or my
friends enjoy using it in everyday life?

2 Design
What should an attractive xy look like so that I or my friends enjoy using it in everyday life? What shape, color, …?

3 Additional Services
What else should an xy offer me? What additional elements could xy have? What else could it support us with?

4 Material
What do I want from the material? How should it feel?
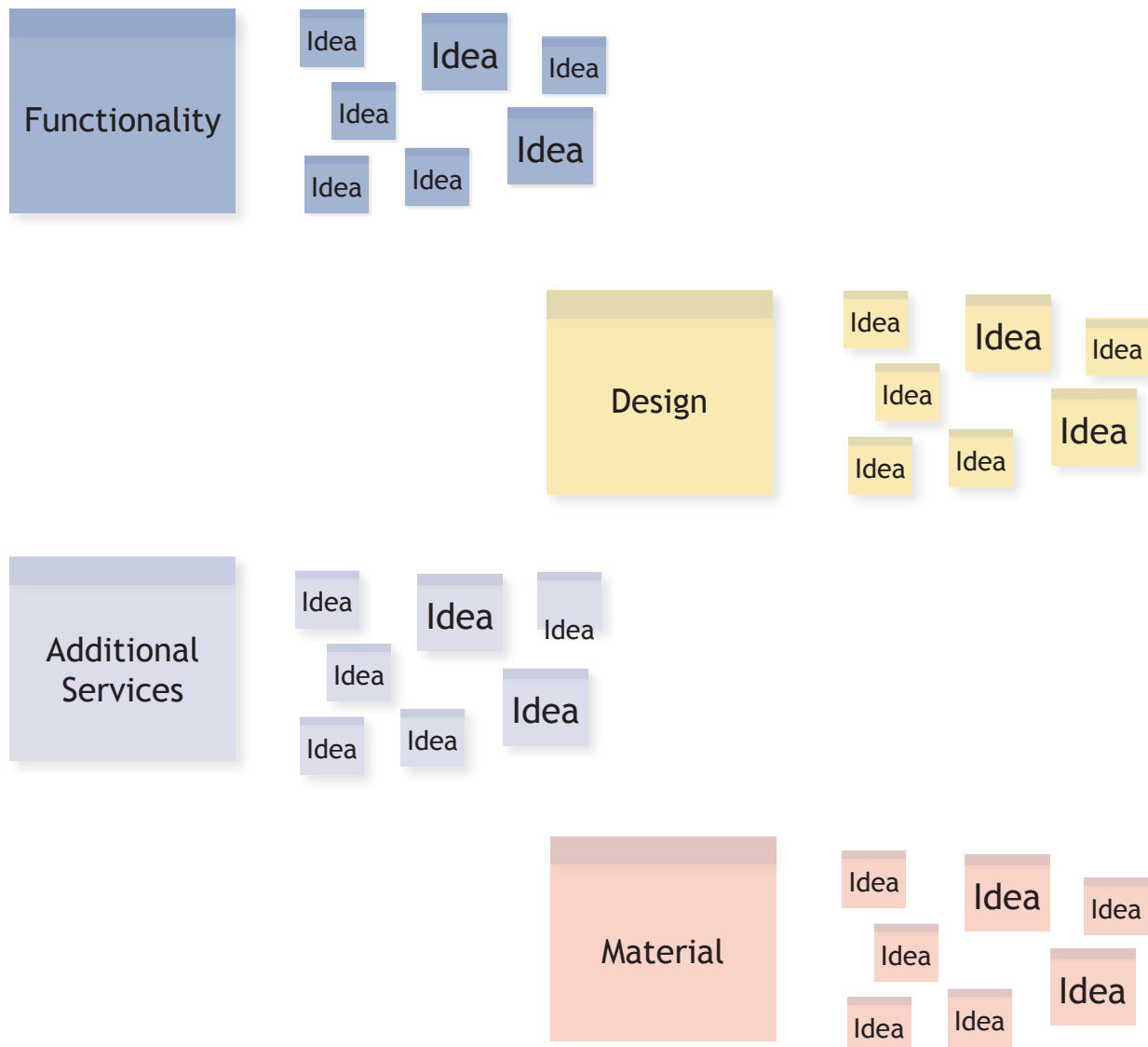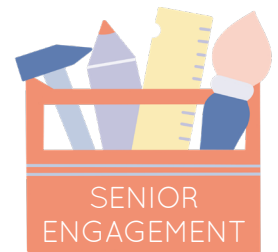What materials should the various elements have?

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BEST PRACTICE DREAMING WORKSHOP
-Voting Top Ideas

Each participant votes on all presented ideas

Best ideas

Functionality

Idea

Idea

Idea

Idea

Idea

Idea

Idea

Design

Idea

Idea

Idea

Idea

Idea

Idea

Idea

Additional Services

Idea

Idea

Idea

Idea

Idea

Idea

Idea

Material

Idea

Idea

Idea

Idea

Idea

Idea

Idea

Conceptualizing: Dreaming Postcards

Description

This kind of postcards invites the target group to share their ideas about "the xy product/service of their dreams". You can pick up ideas from the postcards and use them to get into conversation with seniors.

Preparation

Try to focus on main topics that are most interesting for your development process. Then find open questions and design a nice postcard.

Procedure

Ideally use the postcards as a possibility to go out in public spaces and directly ask people about their ideas and if they can fill out the post cards right away. Interesting conversations are to be expected.

Postcards: Cut-Out-Sample

POSTCARD

What is your best experience with technology?
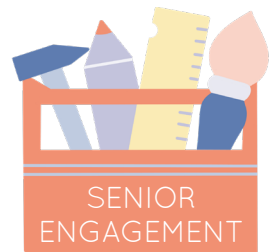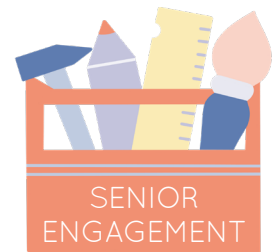
What would you change to make smartphones better?

To

Testing

When previous feedback is already implemented and a (new) prototype is available, you can test it and take a look at what users like and don't like about it.

Testing: Real Life Testing with Thinking-Out-Loud Method

Description

Real life testing means watching people how they use a product or service while thinking out loud. The aim of user testing is that the target group is trying out the product or service, which can be done by using prototypes or via real-life testing and then talking about their experience.

Preparation

It can be very valuable to invite a diverse group of seniors in order to receive many different perceptions. If you invite seniors with hearing/vision impairment or mobility issues provide a setting that considers special requirements. Prepare a timetable and plan the scenario you want to test the product/service in. Define the different roles in your team during a user testing (moderation, observation, documentation). And remember to send a written invitation with contact info, date, place and timeline for the user testing to the participants beforehand.

Procedure

Welcome the participants and introduce the seniors to the team. We recommend organizing user pairs or small groups. Seniors may interact with each other during the user test right away. Also, a lot of time and attention for moderation and observation is needed, therefore big groups are not recommended. For the testing sessions try to provide a nice atmosphere, snacks and enough time to explain and chat as well as a safe testing environment, where seniors feel comfortable to test and share their feelings.

*check out the templates on the next pages for structuring your notes.

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USER TESTING -
Feedback Experience Grid

I like
Things that the person likes/
are worth mentioning

Wishes
Constructive criticism
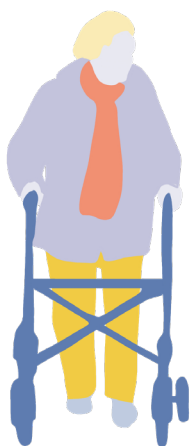
Questions
that arise during the experience

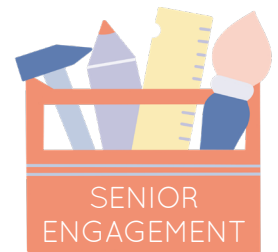**Ideas**
generated during the experience

*Source: Lewrick, Link & Leifer, (2018). Das Design Thinking Playbook. Vahlen. München

Real life testing with
think-out-loud method.

Testing: Real-Life-Testing with Self-Documentation and Interview

Description

It can also be very insightful to ask some users to try out the product for a longer period of time in their daily life. For example, to ask some seniors to use the prototype e.g. a fitness program for one week, while filling out a user experience diary. At the end you can visit them and conduct an interview and hear about their experiences with the product.

Preparation

Once you have decided on using this method to understand user experiences, you can start to think about who to invite. Asking a diverse group of people in regard of gender, age, abilities, ethnicity etc. is very valuable to get many different perspectives.
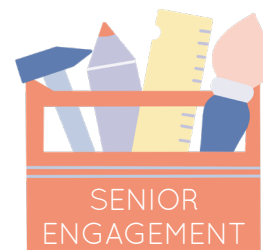
Procedure

Ask a small group of seniors if they want to participate and try to think about incentives for their engagement. Before the real-life testing starts explain the process clearly, provide data declarations and the user experience diary and eventually a rental contract for the prototype.

Real-life-testing with
self-documentation
and interview.

Testing: Usability Workshops

Description

Usability workshops bring companies or service providers together with seniors with the aim to allow seniors to test the products or services and give their feedback. The aim of a usability workshop is that the target group gets to usa a product or service in the workshop and share their experience with the product or service with the company and/or project team.

Preparation

Invite about 5-7 seniors and different staff members from the company for a time slot of about 2 hours. Think about specific questions concearning what they like or dislike. Define the roles within the team: who will be the moderator, who will take notes and observe.

Procedure

Welcome the group and explain the goal of the workshop as well as introduce every member of the team and their roles. Explain the product clearly in the beginning and plan on enough time for questions. Once the basic functions are clear for everyone you can start asking the participants to try it out. After everyone has tried it out you can start asking about their feedback.
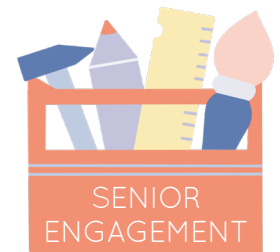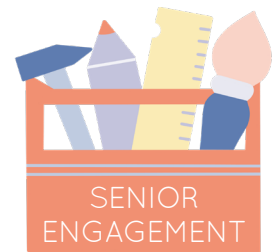
Usability Workshops.

Evaluation:

It is important to provide updates throughout the development process and explain how feedback is taken into consideration.

Both the target group of seniors, and the staff members who can evaluate. For evaluating you can organise a workshop similar to a focus group or use question-naires.

Evaluation: Questionnaires

Description

Questionnaires are a good method to get structured feedback. In each development process evaluation is very important, to see in what way improvements have been taking place and where need for action results.

Preparation

Try to focus on main topics that are most interesting for your development process. Then find open questions and develop a questionnaire.

Procedure

Forward the questionnaire to your participants and inform them about data protection. After receiving all questionnaires summarize the results.

Evaluation.

FINAL CO-CREATING WITH SENIORS LEARNINGS

- Co-creation tools enhance an excellent knowledge of the target groups.

- Systematic feedback processes support product/ service quality as well as the usability itself.

- Testing sessions with the involvement of health professionals and/or caring relatives is valuable to engage the whole system.

- Co-creation is initiating a social dialogue.

- You can use all co-creation methods with seniors. Just make sure that you arrange and organize a senior friendly environment and consider the various needs of the target group (e.g. face to face sessions, breaks, barrierfree).
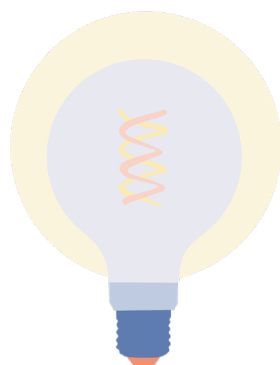
And…

Have a coffee together

Provide some snacks

Have time for a chat before/after the sessions

DON'T forget the FUN!

Postscript Interview

– Read it before the interview, make notes during the
interview and write your notes directly after the interview

1. Observer:

2. Description of contact and invitation of the interviewees:

3. Place, date, time and duration of the interview:

4. Description of the person:

5. Description of spatial conditions, seating, atmosphere:

6. Description of the procedure with all observations that are not audible on
    tape. Pay attention to participants as well as the interviewer (who starts
    talking, postures, body language, eye contact, irritations):

7. Which attitudes are noticeable?

8. Where do they show a lot of energy, where less?

9. How is the discussion structured?

10. Description of one's own feelings, thoughts, actions, action impulses (during, shortly before or after the observation):

11. Open notes:

12. Memos (any new ideas for the project):

Interview Agreement

– between   Name Interviewer: _____

and

Name Interviewee: _____

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2. **Purpose** – The interview takes place as part of the xy project.
The project xy is about:

3. **Partner** – The responsible partner for this interview is:
(fill in your organization and a responsible person)

4. **Mutual declaration of consent** – The interviewee agrees to the tape recording and to the evaluation of the interview. The responsible persons make sure that all collected data is kept strictly confidential. If other persons have access to the data, they will also be required to treat it with strict confidentiality. Personal data will be used exclusively within the project xy. The anonymous data can also be used for other purposes.

5. **Evaluation** – For evaluation purposes a protocol from the tape recording is made. In the protocol and evaluation all personal data (name, address, institutions, etc.) is anonymized.

6. **Publications** – The anonymous written protocol can be cited in excerpts in reports. Excerpts from the anonymized transcript can also be presented to the public in anonymized form.

_____   _____   _____   _____

Place   Date   Interviewer   Interviewee

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SHADOWING

I want to collect input from...

Where & When
LOCATION:
DATE:
TIME:

Who
PERSON SHADOWED:
AGE:
GENDER:
REASON FOR SHADOWING:

Key findings:

_____

_____

_____

_____

_____

_____

USER TEST OBSERVATION

Behaviour/Disabilities e.g. how do the seniors move? How do they feel?	Problems/Dislikes e.g. What causes problems?
Use of the product e.g. How are they using xy? How are they behaving on feedback from xy? ...	Problem solving e.g. How are difficult situations resolved?

Likes e.g. Which aspects work well?	Feeling Good e.g. What makes seniors feel good?	Wishes/Needs e.g. Can needs be identified?

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SHADOWING

I want to collect input from...

USER TEST OBSERVATION

Where & When
LOCATION:
DATE:
TIME:

Who
PERSON SHADOWED:
AGE:
GENDER:
REASON FOR SHADOWING:

Key findings:

_____

_____

_____
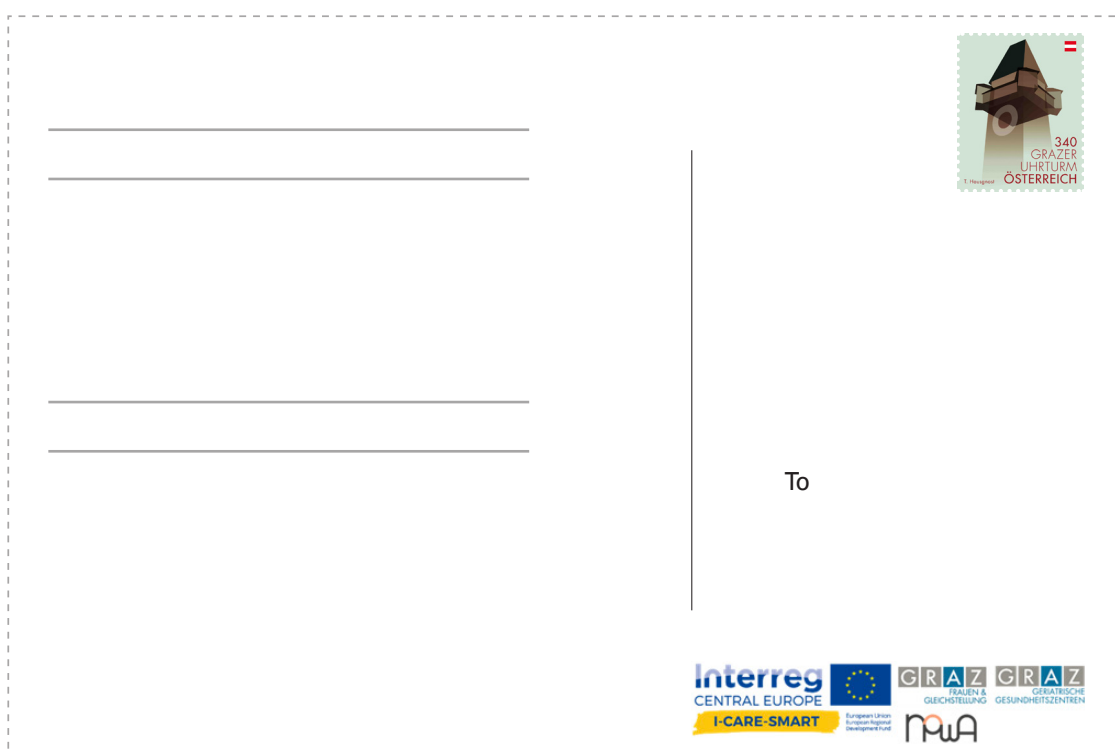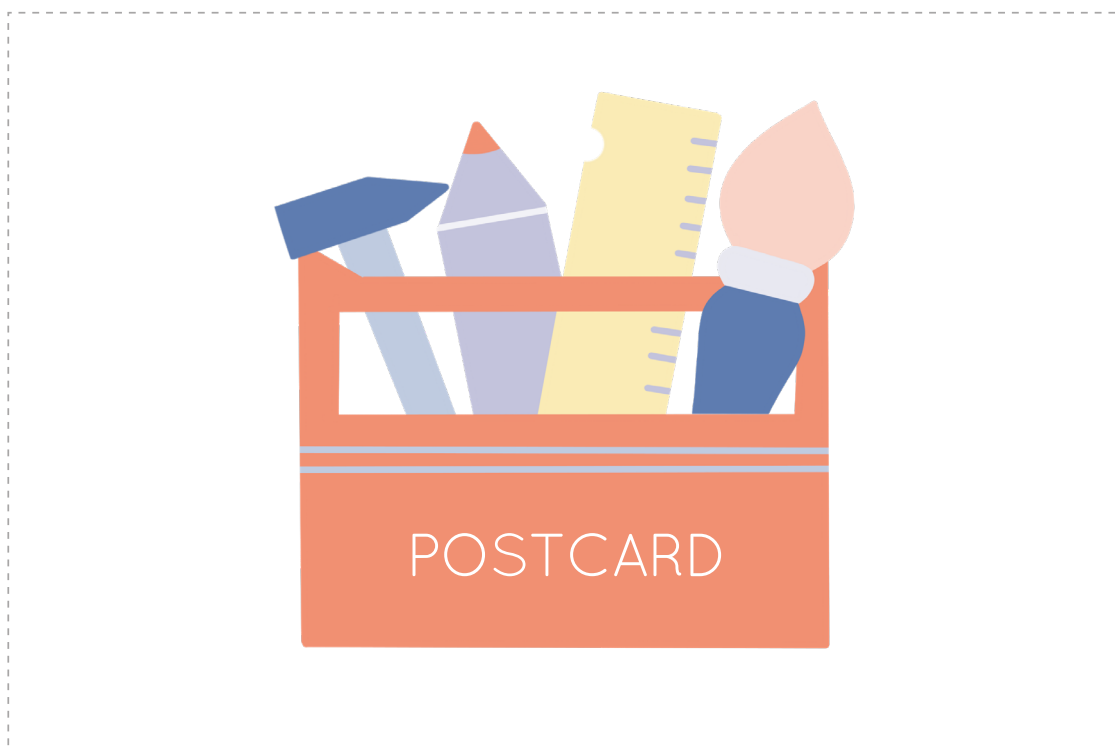
_____

_____

_____

Open notes/Quotes
e.g. user experience, ...

What did you observe which you found suprising?

Postcards: Cut-Out-Sample

POSTCARD

To

USER TESTING -
Feedback Experience Grid

I like
Things that the person likes/
are worth mentioning

Wishes
Constructive criticism

Questions
that arise during the experience

Ideas
generated during the experience

II.
Toolbox for Business Engagement

Index

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INTRODUCTION

The goal of the Toolbox for Business Engagement in co-creation is to support companies to engage (or engage companies) in the co-creation processes within all other members of the quadruple helix*. This document provides information on barriers and success factors that support corporate involvement in co-creation, as well as descriptions of existing tools and best practices to enable readers to choose the right method for their specific co-creation needs to find.

The document is a guide to answering the following questions for each instrument/tool (driven questions):

- How can we improve business engagement in the co-creating solutions for seniors?

- What can be done to promote the tool as a real support for co-creation?

Business Engagement in the I-CARE-SMART project is a set of strategies and activities designed to support and encourage corporate involvement to improve digital solutions for older adults in care and health.
The purpose of business engagement is to address the needs of businesses in co-creation by improving business market opportunities, adoption of new products, and reducing time to market through direct collaboration with all market stakeholders.

Structure of the Toolbox for Business Engagement

The toolbox for business engagement has several purposes:

- To assist public authorities and research centers in engaging businesses.

- To better understand the tools and select the most appropriate ones for the objective(s) that companies need to pursue.

- To clarify what role businesses have within their tools and what they can expect from their involment.

Each tool is described with the same structure:

- A general description of the tool.

- Overview of the main actors and their driving factor.

- A box containing a guide to maximize business engagement (driven questions).

- The summary of the main features of the instrument according to its structure, context and funding.

- The overview of the role played by each quadruple helix member, concerning design or use of the instruments.

BUSINESS ENGAGEMENT – BARRIERS, SUCCESS AND DRIVING FACTORS FROM THE REGIONAL ANALYSIS

Thanks to the regional analysis conducted in Austria, the Czech Republic, Hungary, Italy, Poland and Slovakia, it was possible to define the factors that facilitate or hinder the co-creation process within the members of the quadruple helix. Whether these factors favor the co-creation process or not depends on the market sector, the size of the company or the general economic situation, but it was highlighted that some of these factors are common.

Barriers

Barriers are factors that hinder the co-creation process, make it more difficult, and sometimes result in it not producing useful results.
The main barriers to a company's participation in a co-creation process can be generalized as follows:

1. **The lack of specific knowledge about co-creation.** In general, companies are not aware of how the co-creation process works, how to create the right conditions for co-creation and how to formalize the collaboration. The relevance of this obstacle lies in the benefits of this process. The co-creation process requires effort and time, so it is essential to highlight the benefits that a company can have and the impact that a good process can have on future activities.

2. **The lack of specific funds to support innovation and co-creation.** The co-creation process requires effort and time, so any kind of specific funds for companies increases the possibility of reaching a larger number of companies; national and regional policies can help overcome this obstacle, as can structured information about the opportunities and benefits of co-innovation.

3. **The lack of a trusting relationship.** Most of the collaboration between companies, research centers and end-user representatives is based on an existing collaboration/ relationship or has been introduced to them by other known actors. This means that it is difficult to reach all the actors in a co-creation process and difficult for a new company to be introduced to the co-creation process. To facilitate information, sharing and speed up the process, it is important to have formalized rules and supporting and standardized documents that have been approved by the participants involved.

4. **The lack of public support for co-creation.** Businesses can be involved by researchers and end users, but it is difficult to involve „policy makers." The inclusion of all elements of the quadruple helix is necessary to overcome this obstacle. It may be more useful to provide structured support that enables the involvement of direct public stakeholders, perhaps after an initial assessment by the office. Within the I-CARE SMART project, the establishment of regional working groups is the method for implementing this involvement.

5. **The lack of cross-functional competencies and internal resources to collaborate directly with various actors.** The Silver Economy encompasses many market sectors, and older adults have many different needs. To support the collaborative development of innovative solutions for the care (and health) of older adults, it is important to understand the conditions of older adults (social and health aspects), the market (in terms of the product or service the company wants to develop), and the territory in detail. These are cross-cutting competencies that can be taught by different professionals; it is difficult for companies to have them on their staff, especially SMEs. Some of the tools in our BE toolbox provide transversal competences as a direct service or by matching the required competences with the offer.

Success Factors

Success factors are the factors that facilitate and simplify the co-creation process. The key success factors for a company's involvement in a co-creation process (or in some cases, participation in a co-creation process) can be generalized as follows:

1. **Networking. Being connected and building trusting relationships:**

   - *End-user representatives.*
     To improve solutions, companies need to reach more users.

   - *Customers. The end users may be different from the customers.*

   - *Other firms. Cooperation with other companies is especially important for newly established companies; it enables the acquisition/exchange of knowledge and expe rience, creates a critical mass and/or receives support on various issues.*

   - *Researchers.*

2. **Goal-orientation.** Clear objective(s) of the tool and clear rules for engagement are key factors in supporting corporate engagement. The diversity of stakeholders may be too large to manage with a single tool, or identifying stakeholders may take up too much time for a company.

3. **Venture capital/financial capital.** The ability to find investors, receive support in overcoming bureaucratic problems, obtaining funding, and be accompanied when applying for funds is crucial for companies, especially SMEs.

4. **Sharing ideas/problems.** A trusting situation to share ideas/problems is a way to improve solutions; also, it is the best way to create a collaborative partner- ship for future development or access to funding.

Driving Factors

The driving factors may influence the target audience or the interaction design of the tool; they need to be considered as much as the goals and target audience when developing a tool. Below are the key factors that guide an organization when seeking collaboration for co-development/innovation.

1. **The idea.**

It can be a driving factor for all elements of the quadruple helix (community, government, education, business). The idea for a new product/service or a new application of an existing product can be a driving factor for a company. In this case, a company might be looking for relevant stakeholders for a variety of reasons:

- *Discussion with customers/end users and involvement to verify acceptance.*

- *Involve experts/researchers to overcome implementation issues.*

- *Identify collaboration to share market risks.*

- *The search for investments.*

2. **The need.**

It implies the search for a new solution that can be found through collaboration with other representatives of the quadruple helix. The need is a bundle of factors such as:

- *The distinct need for a particular product/service.*

- *The customer's need for a particular product or service.*

- *The need of a company to improve its position in the market.*

- *The need of a society for new innovative solutions.*

3. **The opportunity.**

The goal is to identify examples of collaboration that target a funding, networking, or marketing opportunity. This can be seen as a direct requirement for a co-creation tool to identify opportunities, but also as a result of the factors mentioned above.

THE TOOLBOX

The Toolbox for Business Engagement is intended to serve as a guide to help identify the right business engagement strategy and/or to understand the methodology used and how to improve business engagement in co-creation.

To this end, the toolbox is organized by tools selected from the best practices identified in the regional analysis. The examples are listed in the I-CARE-SMART publication DT 1.3.2.

Each tool has been described in the same way, i.e., with a general description of the method, the triggering question of the toolbox, and an information sheet that includes the general information and the role of the Quadrupelhelix members involved.

The tools described here are the following:

Procurement for innovation/ pre-commercial procurement

Matching Event

Network Facilitator

Living Lab

Business Incubator

Virtual Community
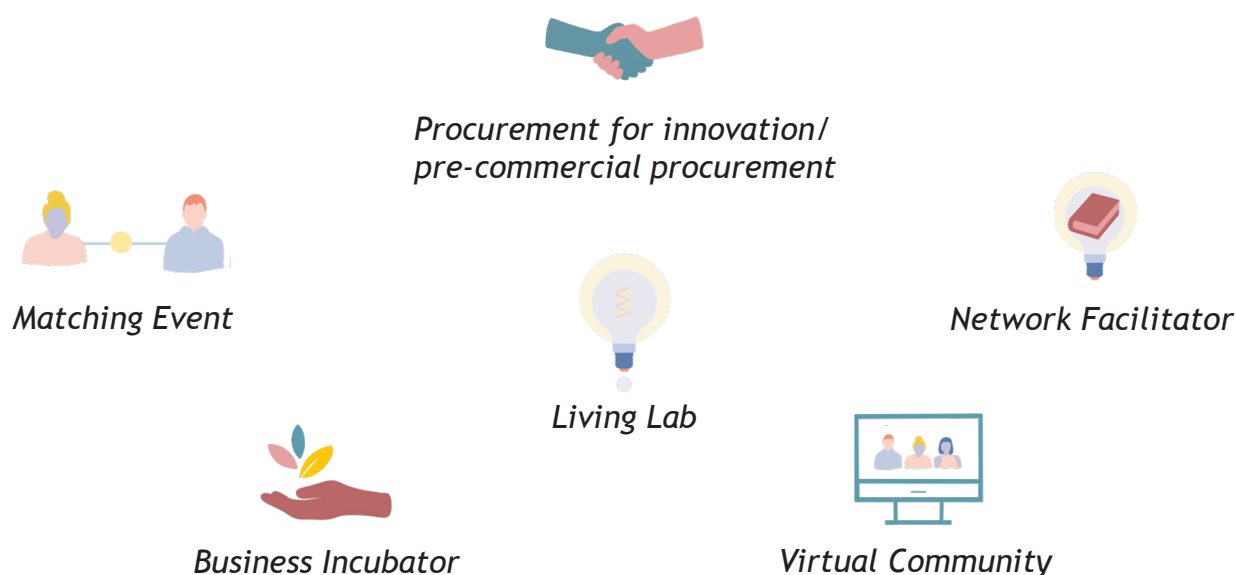
Procurement for Innovation/
Pre-Commercial Procurement

CUSTOMERS want to find out about a possible innovative solution.

BUSINESSES provide critical solution analysis, prototyping, field testing, small scale pre-product development, small scale service development.

Customers and companies are involved in this strategy. The former research provides a possible innovative solution, while the companies provide critical solution analysis, field testing, prototyping and a small-scale pre-product. The tool is not widely used because the customer is expected to pay for the feasibility study, so the market risk is shared between the customer and the company. Companies do not know the tool very well, so most do not apply for it. The goal is:

- To offer customers a solution that does not yet exist on the market.

- Involving the customer(s) in the development of various solutions.

- Economic support for a company/group of companies to develop innovative solutions.

- Supporting companies in sharing market risks with clients.

Main Actors	Driven Factors
The procurer, i.e. stakeholders that have a need	The need
The companies involved in the Identification of a solution	The opportunity

SUGGESTIONS

How can we improve the business engagement in co-creation solutions for seniors?

This tool is advertised as a tender. In order to increase the number of participants or expand the type of companies, it is important that communication explains the balance between costs and benefits for both parties better.

What can be done to promote the tool as a real support for co-creating?

Typically, not all stakeholders are involved in the process. Typically, the clients are public entities or a consortium of health care providers. Critical analysis of solutions should include investigation of end-user acceptance and usability.

PROCUREMENT FOR INNOVATION/PRE-COMMERCIAL PROCUREMENT

1. Characteristics

Eliminating market failures	Procurers can clearly express to the market their need for R&D activities or innovative goods and services that are not available.
Financial support for joint procurement	The procurer provides economic incentives to innovators to reach subsequent stages by sending payments downstream.
Unbundling of R&D and production	The procurement of R&D services and the (possible) purchase of commercial quantities of final products are clearly separated and are usually not covered in the same tender. PI and/or PCP cover the „initial development" of an initial product or service; they may include limited production or delivery, but do not extend to volume production that is part of commercial development. There is no guarantee that the selected prototype contractor(s) will also be awarded a follow-on contract for high-volume production of the proposed solution.
Benefit sharing	The benefit is shared between the client and the contractor(s). Intellectual property rights (IPR) can be managed in two ways: *- The contractor(s) retain all IPR, and the client has a free license to use for internal use. In the case of third party involvement the contractors are obliged to grant non-exclusive rights under common market conditions; this situation often occurs when the Procurer is a public entity.* *- Contractors and procurers share intellectual property rights and rights for commercial use; this situation often occurs when the procurer is a private entity.*
Competitive development in stages and risk sharing	The client's bid consists of several stages (i.e., successive development phases) involving different participants (individual companies or consortia). Multiple companies (or consortia) are allowed to compete in parallel at all stages; ideally, two contractors will reach the final stage. This ensures that the procuring entity has alternative proposals that it can evaluate against various criteria (e.g., design, quality, cost, time to market, etc.). At each stage, the procuring entity decides which solutions can proceed to the next stage. The selected companies can receive a financial contribution from the contracting authority for providing the R&D services of the new phase. The financial thresholds depend on the phase and are associated with risks.

2. Role and participation the of quadruple helix members	
Government/ public authorities	In Public PI or PCP, public entities are the contracting authority and have the task of: - *Designing the tender, i.e. to identify the market needs, the rules for the management of intellectual property rights, the definition of the objectives for each phase, the evaluation criteria and thresholds;* - *the evaluation of the results. Public institutions usually appoint a panel of experts, which applies the evaluation criteria to the solution and prepare the reports on the basis of which the results are published;* - *Providing the financial contribution.* - *There are some PIs or PCPs where the government or public agencies are not directly involved in the bidding process. In this case, the public entities issue a call for proposals on a specific topic. The public agencies are responsible for evaluating the proposals and funding those that address an urgent need. The identified procurer - which can also be a consortium - is responsible for designing the RFP according to the identified need, evaluating the proposal and sharing the benefits. The financial contribution is made (partly) by the public entity.*
Businesses	Businesses are the main actors in PI and PCP, as they develop the innovative solution.
Education	Education representatives are not often involved in this model. There are two ways to get involved: - *Research centers can be established by a company to support specific R&D activities, usually in the first phase.* - *Education can be procured to meet a specific need.* - *Providing financial contribution.* - *They can be involved in defining guidelines or designing participation or training activities for procurers that support the introduction of the identified innovative solution (e.g., service or product).*
Community	*The procurer represents the „customer". In general, the direct involvement of community representatives is not emphasized in the model. When the PI/PCP addresses a health care need, or social need, it means that the procurer has assessed the community's need.*

Living Lab

Living Labs have become a new research concept in which users become co-creators of the innovation process. They are focused on a territorial context and a specific research topic. They are generally open to any company, researcher or end user who wants to learn or test ideas. This model provides:

- Involvement of all stakeholders with a particular focus on end users.

- Innovation through research.

- Testing based on prototypes in a real context.

- Physical space may be required for end-user engagement.

Main Actors	Driven Factors
The firms, end-users, policy makers and other stakeholders within the quadruple helix	The idea/the need

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SUGGESTIONS

How can we improve the business engagement in co-creation solutions for seniors?

The lack of knowledge is the biggest obstacle to the Living Lab. Companies, with the exception of start-ups or spin-offs, usually do not know how to get involved and „leverage" the Living Lab. Promotion should focus on these aspects before the actual co-creation takes place.

What can be done to promote the tool as a real support for co-creating?

The Living Lab inherently includes all the requirements for co-creation. On the contrary, few older adults are frequently involved in the activities, and after a period of time, they feel more like providers of input than exchangers of input. Including representatives of informal caregivers may increase the possibility of improving older adult participation.

LIVING LAB	
1. Characteristics	
Setting boundaries: Governance model	It is important to define a clear governance model that corresponds to the type of Living Lab and the degree of openness. There are two main types of governance: 1. *Hierarchical. In this model, roles are clearly defined and one company or small group is the leader. The leading company defines the problem and selects the solution according to its needs. In principle, Living Labs are open development communities, but to achive more business value, closed and more hierarchical management models should also be applied.* 2. *Flat. There is no predefined main character in this model. There are rules for participation, but problems and solutions can be brought in by each participant.*
Setting boundaries: Collaboration model	There are many different models of collaboration that can characterize the Living Lab. In 2008, Pisano and Verganti defined a list of models for different contexts and cases (see Table 1). Collaboration depends on both (i) ownership and (ii) the type of innovation that the collaborative network has to carry out. These choices greatly influence the degree of innovation and the nature of the expected outcome. Four main types of collaboration (2008) can be used in a network for innovation and all can be applied to Living Lab: 1. *Elite Circle: Is the most important hierarchical model with clearly defined roles. A company (or small group) defines the problem, selects participants and selects the optimal solutions according to its needs. It is mainly used when the solutions are very confidential and/or require special skills.* 2. *Innovation Mall: the identified problem is shared with the community and everyone can propose solutions. After a certain time, the subject (usually a company) that identifies the problem, selects the best solution. This model is better suited for testing usability and improvement of existing products.* 3. *Innovation Community: anyone can propose problems, offer solutions, and decide which solutions to use. The control is flat and is mainly used in enterprises for systemic innovation. It is well suited for solving societal problems.* 4. *Consortium: it is a closed model in which the participants jointly select problems, determine actions, and choose solutions. There is a clear focus, a common understanding, and the participation of highly specialized experts.*

Engage: services provided	A company's participation in a Living Lab also depends on the services offered. The list of services offered depends on the governance model and the collaboration models implemented. According to the review conducted by Eschenbaecher and colleagues of the services offered by the ENoLL Living Lab community, the possible services are the following: • Project preparation services • Innovation and development services for companies • Meeting place • User development methods • Usability testing • Online focus groups • Pilot and innovation environment • Project management services • Prototype creation and prototype testing • Scenario analysis • Needs assessment • Service concepts • Product development services • Commercialisation • Networking
Engage: strategy	Living Labs are based on networks. For this reason, it is necessary to identify best practices for engaging participants, depending on the level of openness defined in the collaboration model. In order to have sustainable and credible business models including strategy and implementation measures as well as future potential, participants need to be engaged. At the same time, all beneficiaries must have a clear vision of the services provided and the IPR management, i.e., a clear picture of the operating model.
2. Role and participation the of quadruple helix members	
Government/ public authorities	The government can get involved in the Living Lab by providing space, supporting some activities, and inviting representatives of specific sectors to attend meetings. Sometimes financial support is also provided.
Businesses	Businesses are the main actors. Companies are beneficiaries of the Living Lab services and can also be part of the governance.
Education	The research centers mainly participate in the development of solutions or in the sharing of experience by experts within the Living Lab.
Community	End users and end user representatives are mainly involved in the flat, open model of the Living Lab. They have access to the space, can test and experience the prototypes, discuss an idea and participate directly in the development of solutions.

Business Incubator

The goal of business incubators is to accelerate the growth of start-up companies that provide services. Incubators can be public or private, and some of them focus on one market sector or technology, which gives companies the opportunity to share space with other companies who have similar interests. This gives entrepreneurs the opportunity to share ideas and problems with other companies in the same sector. The main features are:

- Support for start-ups in the form of services.

- Support for start-ups in terms of business development and market model

- Supporting start-ups in their search for investors.

- Facilitate networking for collaborative design.

Main Actors	Driven Factors
The firms	The need/the idea

The services offered by an incubator have expanded in recent years and also provide the opportunity to collaborate with public institutions or stakeholder representatives. Unfortunately, this process is not standardized in the model, but the overarching competencies required to carry out an innovation process are provided.

SUGGESTIONS

How can we improve the business engagement in co-creation solutions for seniors?

In this case, there is no need to increase the participation of companies.

What can be done to promote the tool as a real support for co-creating?

Incubators often provide training opportunities for their businesses. Training on how to engage seniors is essential to help these companies leverage co-creation beyond the incubation period.

BUSINESS INCUBATOR MODEL

1. Characteristics

Clear theme and clear goals	Business incubators support new-born firms by providing mainly mentorship and education via seminars linked to legal aspects, ad hoc meeting with consultants and human resources for the administrative issue. Business incubators are usually funded by the government, but there are also examples financed by corporations. These last examples are focused on a specific area.
Duration	The incubator program can last between 1 and 5 years. This is one of the main differences to accelerator programs, which last only a few months.
More knowledge and knowledge exchange	Incubators provide a collaborative environment. This allows startups to share a space, have access to a variety of resources, exchange ideas and receive feedback from peers. They provide mentoring from experienced entrepreneurs and business experts.
Provided services	- *Physical space and shared services below market price.* - *Coaching and consulting.* - *Consultations with experts, usually for market plans, business development, innovation processes.* - *Fundraising.* - *Networking.*

2. Role and participation the of quadruple helix members

Government/ public authorities	It finances the incubator and provides some services.
Businesses	The services offered by the incubator are aimed at young entrepreneurs. Companies are also involved as mentors. Companies can also fund some incubators and collaborate with startups in the development of new products.
Education	They are primarily involved in coaching, networking, consulting and reviewing ideas.
Community	User representatives are not involved in the incubators in a structured way.

Matching (R&D Events)
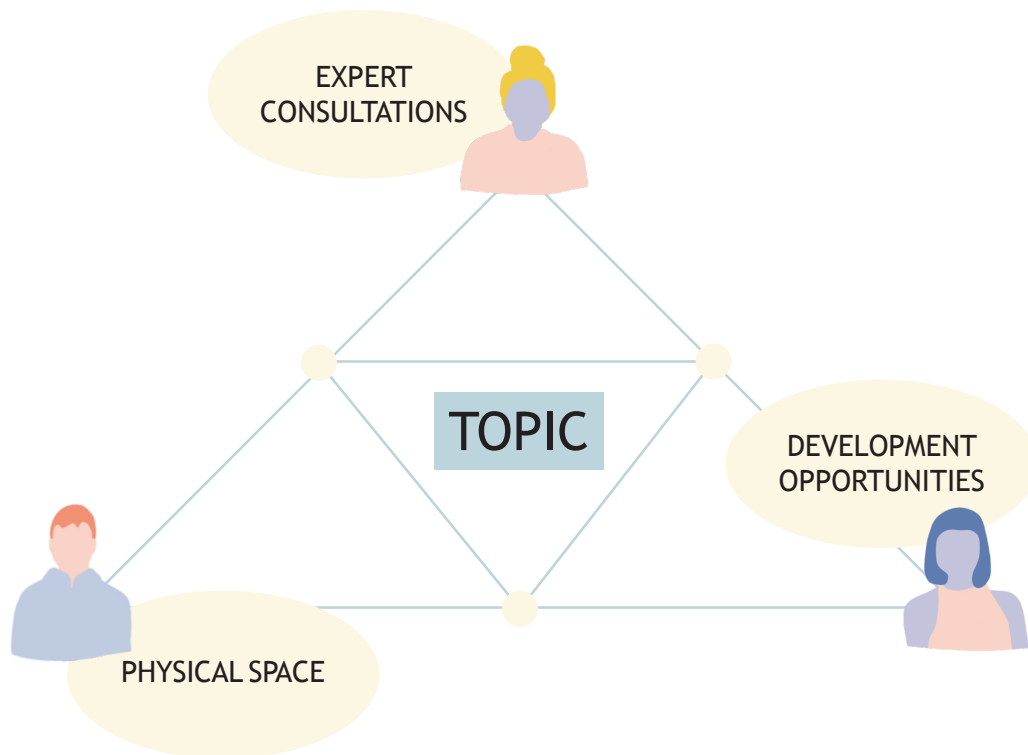
A matcher event - both physical and virtual - allows companies to find other companies to collaborate with; it must be held regularly to focus on a few topics to avoid overlapping content. It is necessary to identify the main actors, which are typically investors, important customers or companies. It is also possible to involve research centers that are interested in collaboration.

The main objective of this tool is to allow direct contact with investors in order to expand the network. Often, only a few investors attend these events, so in most cases, if this aspect is not handled well, the attractiveness decreases after a few issues.

Collecting detailed information about the cooperation wishes of all parties involved, expressing what they are looking for and what they have to offer, makes it possible to identify and bring together the right interlocutors (matching).

Main Actors	Driven Factors
The organizer	The idea
The main stakeholders	The need
The firms	The opportunity/the idea
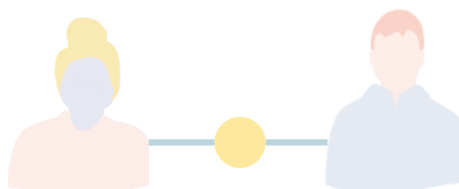
How can we improve the business engagement in co-creation solutions for seniors?

Ensure the participation of researchers and end-user representatives by allowing them to test ideas.

What can be done to promote the tool as a real support for co-creating?

Matching events are perceived as an opportunity to bring potential customers together. To promote them as co-creation opportunities, it is necessary to ensure and communicate the involvement of other stakeholders and give them an appropriate place in the agenda.

MATCHING

1. Characteristics

Clear topics definition	Matching events/platforms are about making contacts and building relationships. Participating companies may have additional goals, such as making a good impression, building collaborations, arranging a follow-up meeting, etc. Defining a clear theme helps companies determine their participation and goals.
Website and platform	The creation of a promotional website is the basis for promoting awareness of the relevant event, but it is not enough. Companies can find information on the Internet, but often the data or information is too large, too complex and too scattered, making it almost impossible for companies to find useful information. Therefore, many marketers have started to use artificial intelligence, i.e. AI-based matchmaking platforms, to find the most appropriate information. These platforms help companies identify information that matches their business areas and goals.
Register & set-up profile	The company's registration is the starting point. Tailored questions guide participants in creating their collaboration profile (the registration form). Participants are asked to provide detailed information about their collaboration offers/desires, such as what type of partner they are looking for. This participant information and collaboration profiles are the cornerstones of the actual matchmaking process. The profiles are published online so that they can be accessed by all event participants and/or visitors to the event website.
Search & matching profiles	If the matching event uses a platform, each registered participant can identify interesting and promising contacts with whom they would like to meet after registering, even before the event. Intelligent search functions allow participants to quickly and easily identify suitable (matching) collaboration profiles. An advanced platform can also make suggestions based on the specified profile and goals.
Pre-event meeting	Participants can request and arrange meetings with other participants prior to the actual event to save time. In any case, registered participants know earlier who/what they can expect at the event, so they can plan essential presentations accordingly.
Meetings	The participants meet for a pre-arranged meeting and talk to each other. Ideally, this first meeting is the starting point for collaboration.

2. Role and participation the of quadruple helix members	
Government/ public authorities	There are some cases of events supported by local institutions. In most cases, the participation of government representatives is not expected.
Businesses	They play the leading roles. They can be a sponsor, event organizer and participant, product/service provider as well as customer.
Education	Their participation depends on the topic of the event, but is rare, especially for public events.
Community	The end users or their representatives are welcome at exhibitions or public events where the companies are also invited to present their products. Their involvement is almost reduced to a few representatives or none at all.

Network Facilitators

> *Supporting and valorising aggregation processes of SMEs by promoting and making easier (i.e. facilitating) networking activities and animation of local expert communities, and within this framework, activities of inter-organisational non-formal and informal learning.*

Franz (2009)
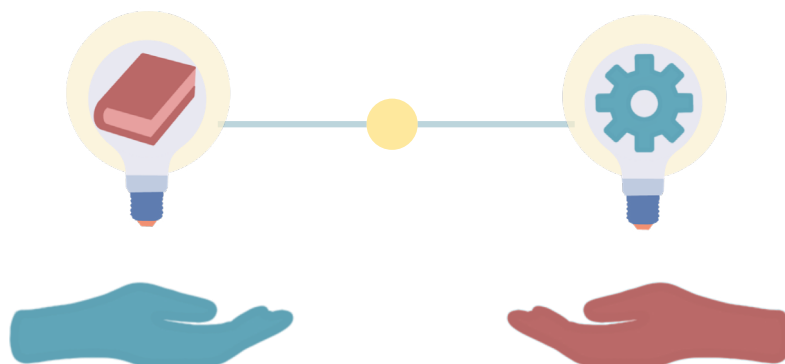
The goals are:

- To create the conditions for an exchange of knowledge .

- Laying the foundations for innovation and co-creation .

- Helping companies meet with other companies or players in the quadruple helix that share similar goals and have complementary skills.

In general, the goal is to create a network of representatives of the quadruple helix. The intermediary can be a consultant, but generally it is companies, private or public.

Main Actors	Driven Factors
The firms or different types of stakeholders	The opportunity

SUGGESTIONS

How can we improve the business engagement in co-creation solutions for seniors?

The added value of the Network Faciliator is that the information shared can be tailored not only to the topic, but also to the specific company. To improve the engagement of the different companies, it is necessary to know exactly who is already involved and to have the possibility to create a communication tailored to the different goals of the companies.

What can be done to promote the tool as a real support for co-creating?

Balanced participation of all stakeholders in the quadruple helix is not easy in the network, but in any case, adequate participation of older adult representatives is imperative to close the loop of co-creation.

NETWORK FACILITATOR

1. Characteristics

Clear purpose/ definition of the subject	The network must have a clear purpose, i.e., a clear focus that meets a real organizational need. Knowing the target companies in detail is the key factor for a facilitator's success.
Clear boundaries	A network that is too large or covers too many topics is unmanageable. It is important to define the boundaries, such as the minimum services to be offered, the type of feedback from the moderator, and the rules for managing requests to the moderator.
Clear organizational context	This aspect refers more to companies that act as facilitators of the network. Their organizational context must be defined and known to the members of the network to better support interaction and participation. Information is needed on (i) the rules to promote and enable public and stakeholder engagement, (ii) aspects of professional development, and (iii) support from their own team.
Network coordination	In order to provide additional solutions that are not directly addressed by the network, or to provide more contact opportunities, e.g., at the international level, specific cooperation with other networks needs to be established and encouraged.
Connection with other networks	If the matching event uses a platform, each registered participant can identify interesting and promising contacts with whom they would like to meet after registering even before the event. Intelligent search functions allow participants to quickly and easily identify suitable (matching) collaboration profiles. An advanced platform can also make suggestions based on the specified profile and goals.
Direct participation	In order to promote the commitment of the companies participating in the network, regular news about the network activities planned and carried out can maintain the attention of the companies.

2. Role and participation the of quadruple helix members	
Government/ public authorities	Involvement of policy makers is mainly done by the network coordinator. Institutional representatives are often invited to speak with network members about a need or opportunity. There are some local offices dedicated to supporting networks on specific issues that cover social interests. These are few in number.
Businesses	They play the main roles. They can act as sponsors, coordinators and members of the network.
Education	Their commitment is profound and covers different roles, such as: • *Members of the network, especially for the research aspects.* • *Consultant on a topic related to the focus of the network.* • *Trainers for the members of the network, for those networks that also support these aspects.*
Community	End-user representatives are often members of these networks, and their participation is also an attractive element for business involvement.

Virtual Community for Innovation

According to Youngblood's 1984 definition, a virtual community is „a group of people who exchange words and ideas through the mediation of digital networks. This tool is available to anyone who can use a web application. The goals of VCI are:

- Promotion of transnational cooperation and co-creation.

- Gaining time for the co-design process.

- Support for both synchronous and asynchronous communication.

- Identifying innovative solutions for elderly care.

„A virtual innovation community consists of a large number of individuals who share common interests and serve the common goal of innovation. [...] The common goal of the individuals is to find new, creative solutions to product-related issues or personal needs." According to this definition, the components of the Virtual Innovation Community (VCI) are not unrelated and are:

- The individuals.

- The topic to talk about.

- The paradigm of interaction through the virtual community is familiar to users.

Main Actors	Driven Factors
The firms	The idea/the opportunity
Researchers	The idea/the opportunity
Community	The need

SUGGESTIONS

How can we improve the business engagement in co-creation solutions for seniors?

VCI reduces the time required for co-creation, enabling a-synchronous interactions. To keep VCI alive, it is necessary to involve all customer representatives, such as older representatives and „smart seniors".

What can be done to promote the tool as a real support for co-creating?

The tool can be a real support for co-creation if there is an adequate number of users; it is also necessary to ensure a period of support for dissemination and a period of support for the platform to verify that it is correctly populated.

VIRTUAL COMMUNITY FOR INNOVATION

1. Characteristics

Clear objectives/ topics	Similar to the network, the VCI theme should be focused to reduce the entropy of a „social network". At the same time, it should be very clear in order to attract the right actors.
Expansion of knowledge and knowledge exchange	The VCI is a collaborative environment where users can share ideas. In order to organize the community into interdependent and complementary user groups, structuring contributors by providing appropriate tools, discussion forums, and specific exchanges for each user category is the right strategy to guide users in the proper use of the tool.
Clear organizational context	The online context must be defined to better support interaction and participation; it must: *- Be active and interesting for users* *- Build relationships and interest the users*
Direct participation	To encourage business and user engagement in the community, it is important to organize regular events to bring users together and facilitate their meetings.
Engage: strategy	Especially at the beginning of VCI life, it is necessary to provide support by initiating discussions on specific topics or issues, developing activities, and sharing ideas and best practices.

2. Role and participation the of quadruple helix members

Government/ public authorities	Representatives of the government and the public sector in general can make their contribution to any discussion from the point of view of regulation and the applicability of ideas. In some cases, they also make a financial contribution to support the maintenance of infrastructure.
Businesses	They play the lead roles. They can gather end-user feedback, develop additional revenue streams, develop the brand, or provide technical support.
Education	Researchers are usually the most involved. They help to share knowledge and discuss ideas and solutions.
Community	End users and their representatives are involved in the VCI because they can test, discuss, and improve the community through their participation.