# ICT-INEX Project

# Deliverable 1 (IO1) version EN
# Analysis of barriers, needs and preferences of potential users of the project outcome, made in compliance to Design Thinking methodology and including the 3 selected disadvantaged groups

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**Abstract:** This document contains the information how to use Design Thinking methodology in project to increase outcomes. Design Thinking methodology will use an adequate set of tools and techniques, resulting with an implementable outcome. This report provides the summary of all the activities covered in Intellectual Output 1. Document presents the final insights and recommendations for the process, which was used to create Intellectual Outputs 2-6 and the final Intellectual Output 7.

## Disclaimer

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# Executive Summary

Design Thinking is a process that combines creativity and innovation, focusing on the needs of future users or customers. Better understanding of defavoured groups on the job market in the project helped create better solutions to test in pilots within the project. The Design Thinking process gave a lot of information which was used to create Intellectual Outputs 2-6 and the final Intellectual Output 7. Result was designed according to the following steps:

- Empathize
- Define
- Ideate
- Prototype
- Test

Comparing the status of knowledge at the stage of preparing the project with the knowledge and insights obtained within the Design Thinking process it can be stated that the process allowed to prepare better solutions which better include the needs and barriers of the 3 defavoured groups on the job market because these 3 groups were better understood thanks to the application of the Design Thinking process.

# Table of Contents

# Glossary

| | |
|---|---|
| **DT** | Design Thinking |
| **SBT** | Simulator based training |
| **CBT** | Computer based training |
| **VR** | Virtual Reality |
| **AR** | Augmented reality |
| **High-end** | High-level, large traditional vehicle body simulator (motion platform included) |
| **Low-end** | Light, easily movable (or completely mobile simulator – usually without motion platform and vehicle body) |

# 1.What is Design Thinking methodology?

**Design Thinking is** a process that combines creativity and innovation, focusing on the needs of future customers (customers, users). This creates a practical solution, which is attractive because it is focused on a person. The design thinking process itself organizes the tools that you can use to create brilliant solutions in the following steps.

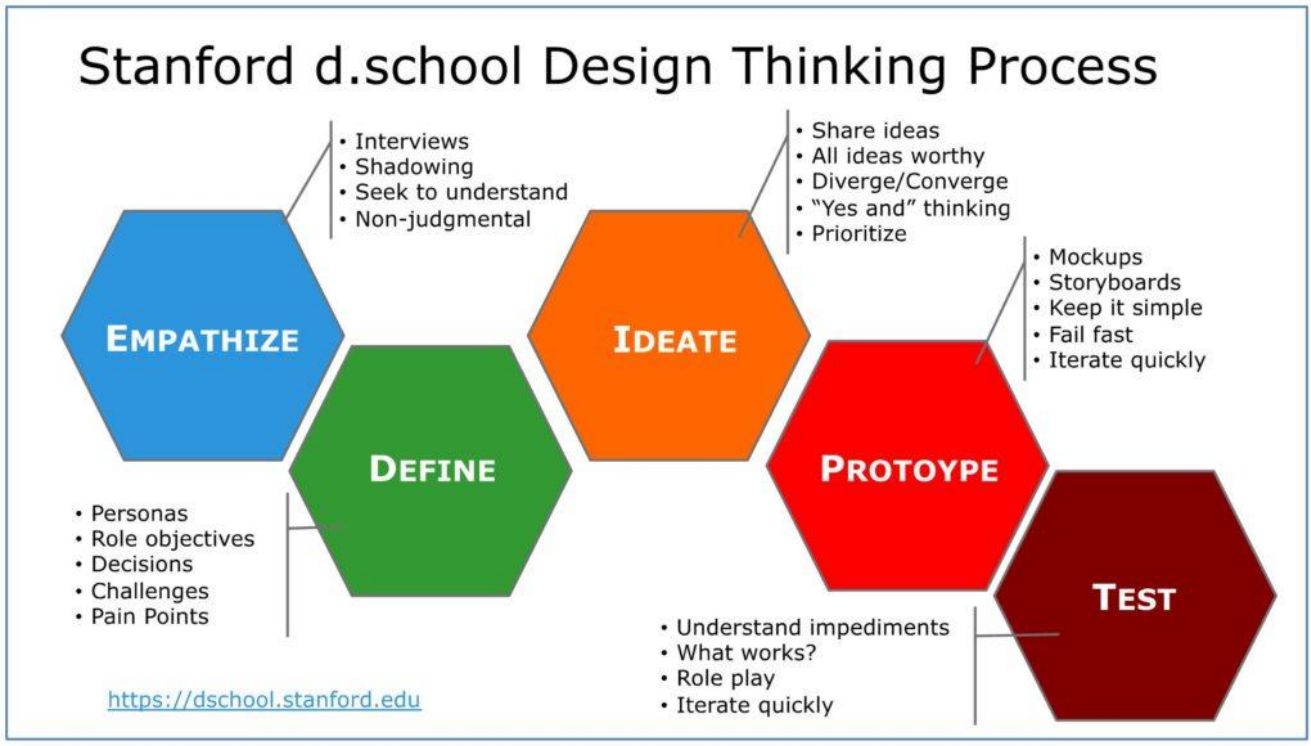


**Figure 1 Five Steps In The Design Thinking Process**

Source: https://dschool.stanford.edu/

The initial activities in the process are analytical and research and allow to focus on the needs of future actions recipients and define problems from the scratch. Ideas generated as part of this process are usually being tested from cheap, simple prototypes, instead of jumping directly to expensive and risky implementations. . The whole is realized by several teams in the surroundings of future actions recipients. Mostly, the work is supported by the moderator. The process helps design services/products which meet the customer real needs.

# 2. Why to use design thinking methodology for designing a driver training?

Thanks to adopting Design Thinking methodology the user perspective (especially the perspective of 3 disadvantaged groups) will be taken into account at every stage of designing the final outcome. Design Thinking is a process that combines creativity and innovation, focusing on the needs of future users or customers.
Through its use, the **outcome** (training mode for PD candidates) **is formed in an attractive, human-centered way.** Each elements of the analysis of barriers, needs and preferences of potential users will be analysed using Design Thinking methodology and used during the development of results O2-O7.


**Figure 2 First Design Thinking workshop in the project**

Source: Cargo


**Figure 3 First Design Thinking workshop in the project**

Source: Cargo

# 3.How to use Design Thinking in project

Organizations increasingly face new complexities  challenges that require a new approach to finding efficient and feasible solutions. Often the current way of doing things is sufficient to face the unknown and to date the problem of the audience. Hence there are sought new ways of generating innovation. These methods need to take into account both **the needs** and **the technological capabilities of the final solution,** in a **cost effective way** for all parties. Design Thinking, in turn, helps us to manage the creative process in order to find an appropriate solution.

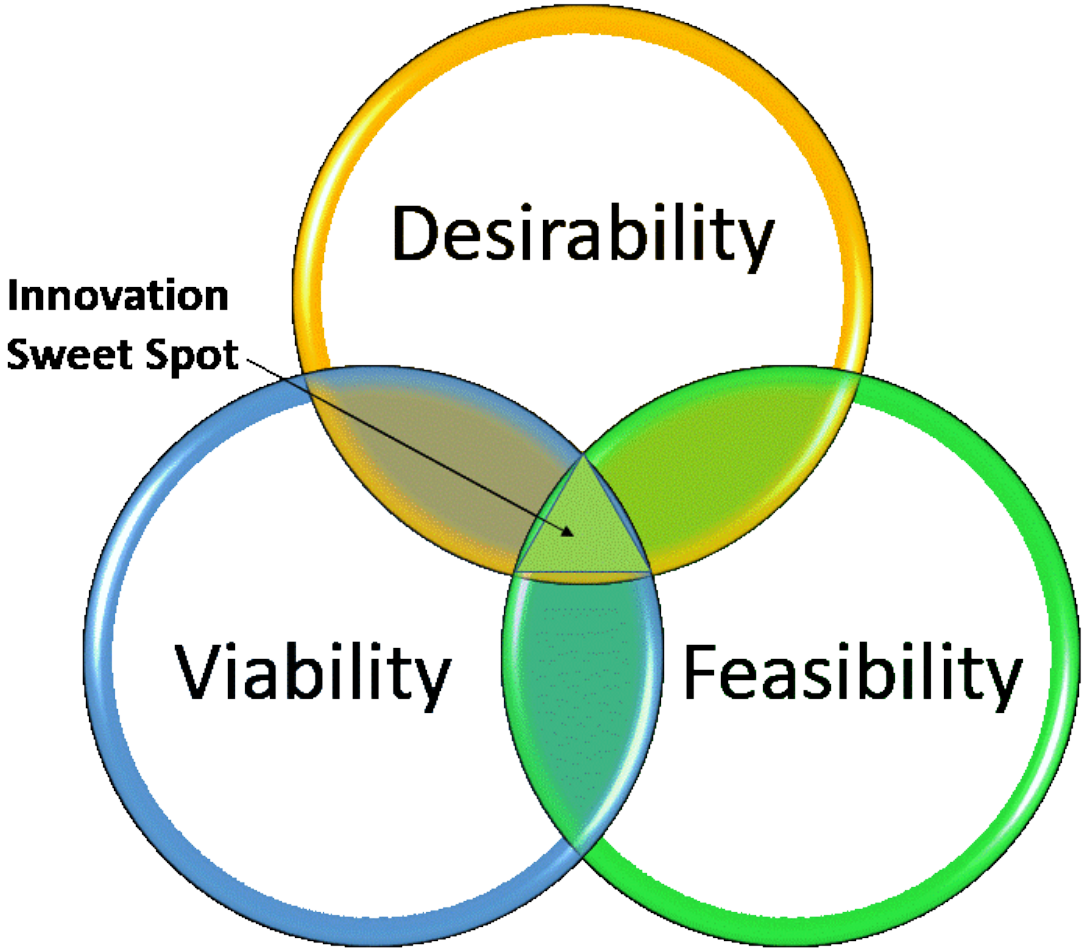


**Figure 4 Desirability, Feasibility, Viability: The Sweet Spot for Innovation**

Source: https://medium.com/innovation-sweet-spot/desirability-feasibility-viability-the-sweet-spot-for-innovation-d7946de2183c

Please keep in mind that the Design Thinking process is not a clear method of working with defined boundaries and strict tasks to be performed to go from start to finish. Basically there are many variations of how one can implement it and what

effect is achieved. Some will want to go by profoundly overworking as many tools as possible to ensure the business success of a worked out solution.

**What to do at each stage?**

At every stage a wide range of tools can be used, they to find a the most adequate solution for a certain challenge. That way the whole design thinking process goes forward. Some of the tools are common applied, such as ethnographic studies, stakeholder mapping, brainstorming, paper models, or usability testing. Selecting and customizing these tools for our project (in annexes) is one of the first tasks facing the organization, team and a moderator who begin working in accordance with design thinking.

Exemplary tools that can be used in the following stages (steps):

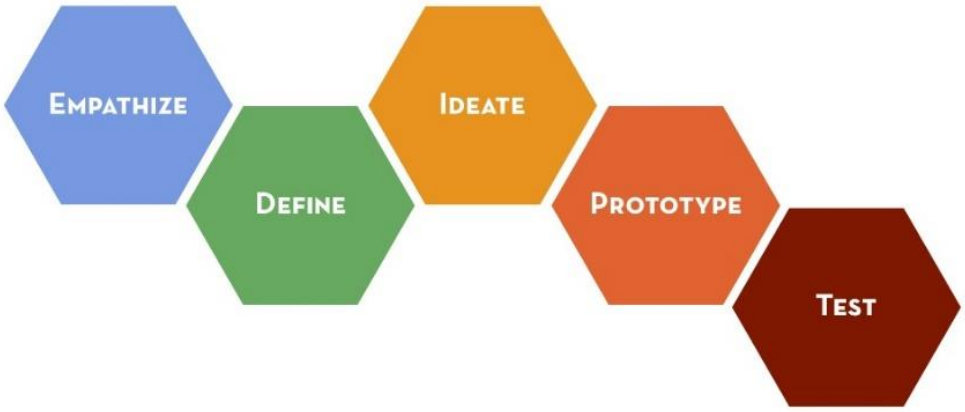


**Figure 5 The 5 stages of Design Thinking**

Source: http://www.vsholding.dk/5-stages-in-the-design-thinking-process/

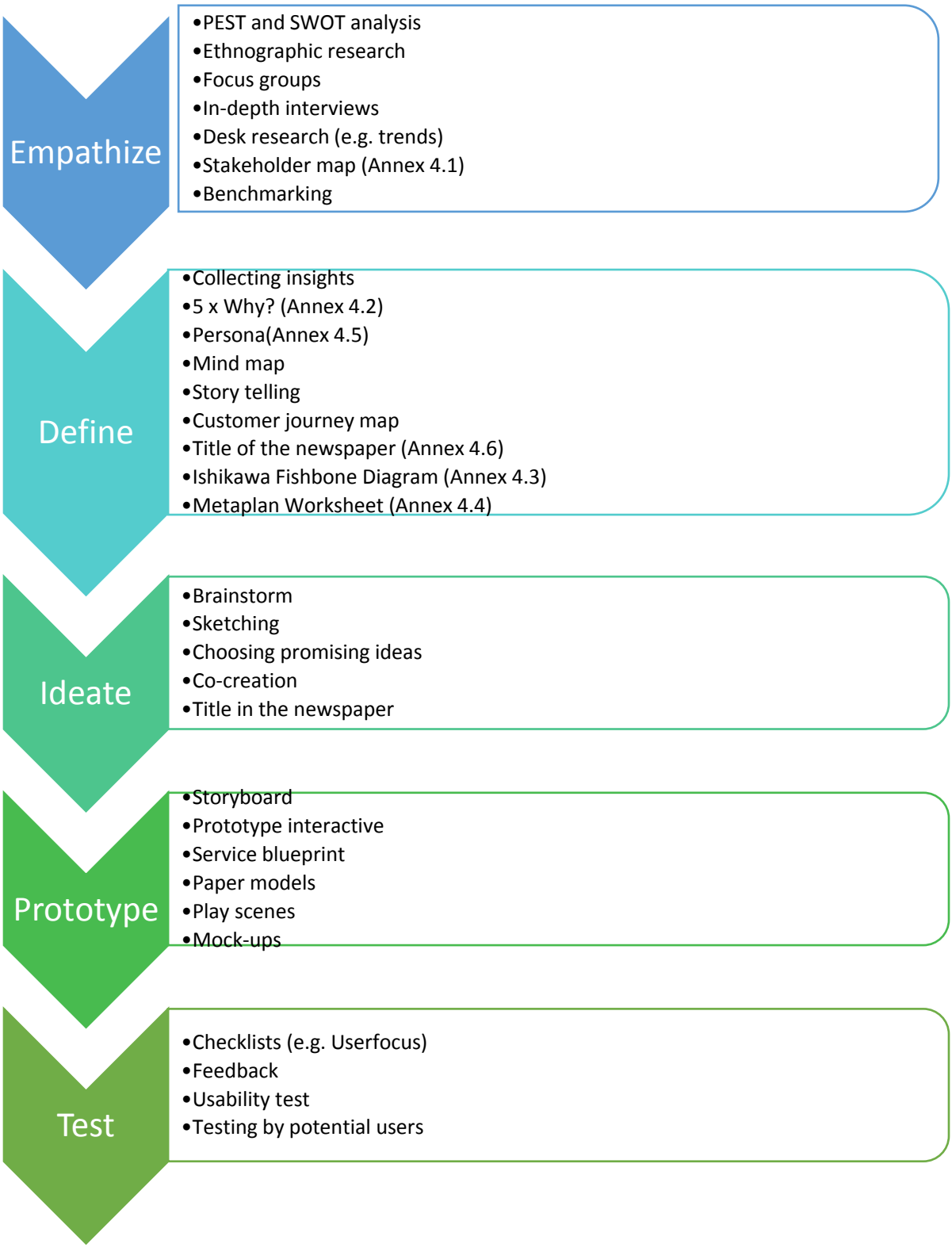


**Figure 6 The 5 Stages and tools in the Design Thinking Process**

Source: own elaboration

Design Thinking is a process that must be properly planned before carried out. For each stage there is a range tools, out of them suitable ones should be matched with the specifics of the project. The first step to take before the process starts is to identify the challenge you will be working on. This allow to focus on work in a specific area.

**THE PROJECT AIMS to increase the accessibility and effectiveness of PD training with the use of ICT-based tools which will take into account the needs of some disadvantaged groups on the labour market.**

## 3.1 How to organize workshops?

Design Thinking is often used to work within an organization, to find new solutions that could be implemented. The size of a workshop group can range from 5 to 20 persons. In addition, while working teams will take on challenges should have about 4-5 members. It is important to plan the workshop and emphasize the important aspects for the participants. In collaboration, it is worthwhile to connect people with different experiences and skills, which have not had so far opportunity to work together. This will allow you to analyse the problems from different angles as an inspiration to the ideas. The space where workshop participants will work is very important. The specificity of work according to the design thinking process requires more space than normal training. Individual teams should have the possibility of working together at large tables, preferably round, but this is usually difficult, so they can also be square (but try avoid long, rectangular tables and halls where they are permanently fixed to the ground). It is important that the members of the team could talk freely with each other. The zones of each team should be far enough and apart not to interfere with work and in discussions. There should be available walls around them, on which people will hang up filled flipcharts or sticky notes with ideas. Also good lighting, refreshments, varieties of coffee, tea, water and snacks, as well as materials that will be used at work - including large flipchart cards, coloured cards adhesive, markers, fixing tape, adhesive tape, scissors and materials needed for prototyping.

## 3.2 Empathize

The Design Thinking process begins with the recognition of the situation within to look for the solutions. This stage is also called empathization, because you try to get into the shoes of the audience for whom the design is made. Discovering the problems and looking for inspiration will be required entry of the environment of our customers or users, to know their perspective. In this phase you can use different ways of understanding people for whom you design. You should enter their

world to watch and to ask questions. You should listen to what they have to say for better understanding what do they think and feel. Knowing their lives, needs, desires, and emotions is an inspiration to create new ideas that can improve their present situation. To get all the required information different research tools can used.

**Ethnographic studies**

According to the definition, ethnography is a direct study of people, while participatory observation and interviews to know social behaviours. . An investigator in this case plays an active role in the daily activities of an examined person, observes and keeps track of what the person is doing and can directly record it, ask for clarification and interpretation of the decisions, actions or behaviors. The main feature of this type of research is to implement it in the natural environment: at home, at work, in the shop, or in another place that is related to the purpose of research. You will receive in such cases information about actual behavior, not just declarative, which may appear during e.g. surveys or surveys in-depth interviews. An example of ethnographic studies is direct observation (participant observation) - possible to carry out in-home visits, during shopping (shopper trips) or, for example, during the whole day of the sample clients (a day in my life). Already during the actual observation of actual behaviour. People can find ideas that will help solve their problems.

**In-depth interviews**

This is a classic method of conducting qualitative research. In projects you can use both individual and group interviews, which are based on the interview of the researcher with the respondent for a specified topic. In-depth interviews allow you to understand and explain your behaviour people and their decisions. For more detailed information, we often ask different questions to our audience that may be adapted to the course of the conversation. The most helpful is to ask open questions (starting with e.g. ... What? ... Why? ...) instead of closed questions (starting with? ...?). This allows you to get a richer perspective on the experience of the person with who you talk without getting just the answer yes or no. For better preparation for the study you should use pre-prepared questions during conversation, in order to record their results and observations.

**Desk research**

This is a method of collecting information about the challenge from different sources like web pages, books, magazines, blogs, articles, etc. However, as the name implies points are the tests run from behind the desk and rely mostly on browsing the internet. This approach gives you the opportunity to collect information from other sources than the recipient. It allows also to capture the

views and trends that may influence the exploited topic. You can actually do desk research at every stage of the Design Thinking process, e.g. for verification or deepening emerging issues.

## 3.3 Define

Defining, also called synthesis, is the stage in which you make sense about the information gathered in the previous phase. Team member should analyse and combine what they discovered. This is also the moment when the whole team gets to know the results of the study and share knowledge about the topic that has been worked on.

### Collecting insights

This is the moment when everyone should have their own set of adhesive cards, and something to quote. Each team member should take a moment to calmly save notes and observations from every interviewed person - one perception on a separate note. Now it is worth to focus on the specific things that each participant saw and heard. Then everyone shares their experiences with the team. Once everyone shares their stories, the team should sacrifice a few minutes to divide notes in to groups of topics. When creating groups of topics, participants should name the topics and save them on separate pages above the insights. Including that you should pay attention to unmet needs, barriers and also catch up the opportunities, that can become the basis of future ideas for solutions.

### Persona

Persona is a model of our recipient in the form of description of features, experience, the needs and objectives that are the result of the research. This is an image of the unit -a person who could really exist and be like our customer, though is completely invented. It is an idea of who can be our customer. Each person is given a name and often the name that refers to her/his features. Persona has a short biography, visualisation - a picture or a drawing. Using this tool you should also describe the expectations and needs with respect of product or service and frustration associated with its current state. This isn't a general segmentation of the market, commonly used in marketing. Persona helps to streamline communication in a team by making all the assumptions underlying to the project and making possible a discussion on the identified needs of the recipient. You can use the template when working on Personas following the example of Appendix 3 and participants can prepare it on a flipchart sheet. Keep in mind that although the persona is prepared is not a real person, we describe it as if it actually existed - e.g. we do not specify the age for 45-50 years, but specific - 48 years.

## Customer journey map

A tool that helps you to model and analyse your audience is a customer journey map. It allows to capture the interaction between the customer and the company or organization on individual stages of service implementation. It also includes activities related to the search for a product or service. As a map visualize the experience and emotions of our customers, based on it You can propose improvements in the hitherto process. At first it allows you to distribute the services and on the basis of this you will work out ideas with respect to the individual customer-organization contact points. Customer map is being prepared based on the research carried out within the design thinking process and taking into account the client's point of view. During the workshop you can use the customer's travel map template, which is annex 4 and put it on the flipchart. Participants should think about the stages from which the process is related to the topic of the project. They then print each stage, the points of contact (i.e. with whom the customer has contact, such as hotline, website, shelf in shop, packaging, etc.). In subsequent lines, what does the customer do in every stage and what he lacks. At the end of each the stage  it can be marked how happy or frustrated is a client - you can draw the appropriate smileys and then turn them together by creating a graph of emotion, and thus a travel map will become a map of experiences. The last line is optional – if at this stage the team already has some initial ideas for solutions, it is worth to note them.

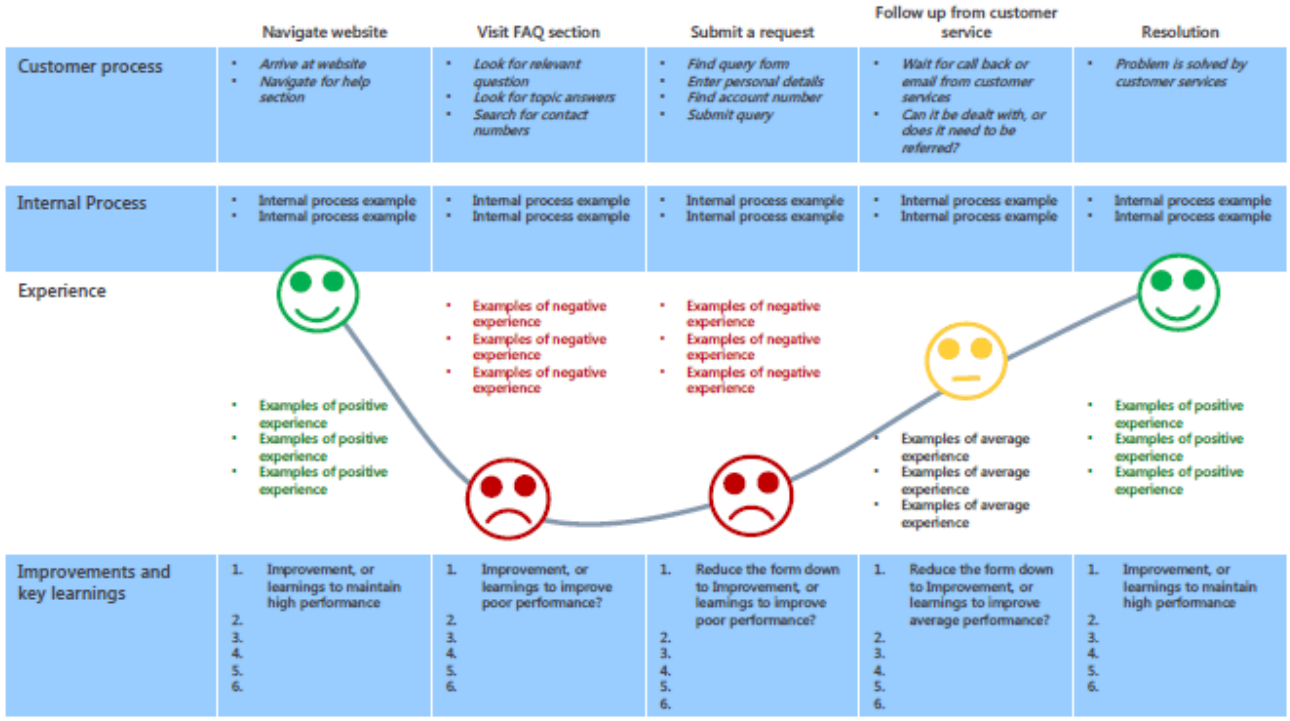


**Figure 7 Example of Customer Journey Map**

## 3.4 Ideate

This is the stage during which the team should generate as much ideas as possible, in response to an identified problem. Brainstorm, which is the basis of this stage, encourages the search without restrictions. This is the moment when you can even portray crazy ideas that can become visionary thoughts. With careful preparation and after setting clear rules, a brainstorming session can bring hundreds of new ideas.

### Brainstorm

This is the most famous method of generating ideas, which is increasingly common It is used in everyday work, as a way of activation workers at meetings. It is used even during informal discussions of friends who are trying to solve a common problem. In design thinking it is the foundation of the solution stage. Before you start, you need to make sure all participants have known a problem well, that needs to be resolved. Brainstorming is based on a few rules that you need to keep in mind during the whole ideas generation. The basics are:

• Criticism is forbidden. No proposal is allowed to be judged, until all are presented (time will come for selection ).
• Crazy ideas are desirable. Reason: It is easier to reject ideas rather than invent them.

• Speak as many ideas as you can. Counts quantity, not quality.
• Capture the ideas of others. Develop and consolidate them afresh.

***Before starting***, you should inform the participants of these rules. Then as a moderator in several stages you will carry out a storm of brains. Before this happens, make sure everyone has the enough amount of sticky notes and something to write (preferably a marker) commencement. Pass the rules and report the problem that you need to solve. If the participants have any questions or concerns, try to dispel them.

***First ideas***

For the first 5 minutes the participants have time write in silence the proposals to solve the problem - each on a separate sheet. It is also advisable to add simple sketches to each idea. At the end of the day, every member of the team presents the written suggestions and stick them on the wall or table.

***Further solutions***

In the next step you should ask if anyone like to add some new ideas, followed by the step of stitching the next saved cards.

***Sorting ideas***

All ideas have been so far glued in a random places, so they should be sorted. Team members divide similar ideas into groups of relevant categories. It may happen that there will be some single sticky notes that do not fit into any category.

***Assessment of ideas***

Brainstorming will probably end up with generating a lot many concepts that can not be fully realized. It is important to find the priorities and decide which ideas you can continue to work on the details. Think about the ideas that are the most interesting, ground breaking and attractive for the audience - Think which elements you can combine into one common process service.

## 3.5 Prototype

Prototyping consists of swiftly revitalizing ideas, sharing with the people for whom we design. Thanks to that team will constantly learn and develop their ideas to bring about more effective and effective solutions before they are implemented. Traditionally, once you have generated an idea, you introduce a solution to the market, with the use of considerable amount of time and money, to know whether it is expected by the customers and whether the customers will choose it. It involves a big deal risk of failure. Prototyping can significantly reduce this risk, encouraging small, simple experiments and preliminary tests concepts. There is a

possibility of catching potential failures and items that are received - differently than youexpected.

**Figure 8 Example of prototype (different view)**

Source: Cargo

**Figure 9 Example of prototype (different view)**

Source: Cargo

## Storyboard

Before you move on to implementing solutions or even making prototypes. It is worth to prepare the history, thanks to which the participants of the workshop will present their idea. Storyboard is a great tool, thanks the story of the solution will get a visualization element. Several simple drawings that are prepared for the story

should show how the users interact with contact points of the design. In addition, emotions are shown during specific events and actions. It is presented as the customers go through the individual stages of the service process and how they communicate with the company or institution and what is the effect of this interaction. Visualizing history allows to verify if all components of the service process have been defined properly and which points of contact can be further tested based on physical prototypes.

During the workshop ask participants to prepare a graphic story on the flipchart about how their solution will function. They should draw at least 9 scenes where there will be visible individual steps that shows the customers' interaction with contact points (like website, store shelf, packaging, product etc.) and the emotions that come with it.


**Figure 10 Example of Storyboard**

Source: www.storyboardthat.com

### Interactive prototype

In addition to Storyboarding, participants should build prototypes, that will make their idea even more specific. Interactive prototypes help you to draw the ideas that you will have in real life world. This allows potential customers to experience the features of the solution and will allow you to provide feedback. Usually you will

create simple physical things (props), you can create the mock up or remodel the environment. This is supposed to encourage interaction with the idea of a solution, and to helps the team to observe behaviour and interactions on the line: recipient-product. Due to the paper prototypes are built quickly and easily, you can create a lot of that to make it possible to gather useful feedback for the alternative solutions. Prototypes should be made of items that can be freely formed. In the case of prototyping a digital product you can prepare the sheets of individual screens thus test the usability of it before writing the actual code of the application.

## 3.6 Test

Delivering the prototype into the hands of real people, potential buyers, allows you to get feedback and is the first moment, when an idea is verified with a other point of view, than view of the team. Feedback allows to learn from the audience, understand what does work and get inspiration, how to make the idea even better.

**Collecting feedback**

Test prototypes should be passed on to users. It is best to explain as little as possible how the solution works and allow testers to come into interaction with the product. You can say something like "You are at the airport and you have to check your baggage - use it this way". When passing a prototype to a test it is good to inform them that it is just an idea which can be further developed, however, should be treated as if it was a real product. Then appoint the members of the team, just like in the research stage, observe the way they use the prototype and make notes. At the end you can ask for impressions and opinions. You should not precisely instruct testers about your use of the prototype or convince them to design solutions.

**Figure 11 Example of collecting feedback**

Source: own photo

Use feedback that you collectedduring the test, to determine the changes that should be introduced to the next version of the solution. Then You can continue the tests to improve the idea. It is also possible to make minor changes during the test itself, reacting "on the fly" on the suggestions indicated by the recipients. Sometimes it can help to invite the people for whom the team is designing to cooperation on the basis of the co-creation of the final solution.

**Implementation**

This stage is often absent in the design thinking process, however it is important as well as other stages, because we do not design for ourselves, but we are looking for solutions that can be implemented in the real world. During workshops, while which the participants have to know the design thinking method, at the end of the work the solution are presented to the remaining teams. Determining the final solution, it should be taken into account by the recipients, that it should be - at the same time - cost-effective and feasible technologically.

**Service blueprint**

Service blueprint is a tool often used as the last step of defining service innovation. It can also help to diagnose problems in the early analytical stages of the process design thinking. Supports map and visualize service processes, divide them into individual steps and put them into a scheme that takes into account perspectives of the user, organization (company) and other entities, which may be involved in providing the service. Visualization takes place on several levels. First, you define the stages of the new service, anddescribe the customer contact points with the service and actions that customers take. Then the activities are described by the organization. They are divided into two levels – visible and hidden for customers (front stage and back stage). Last part is supporting processes that may occur and are not related directly to the customers' support (e.g. related to technology, processes internal, etc.).

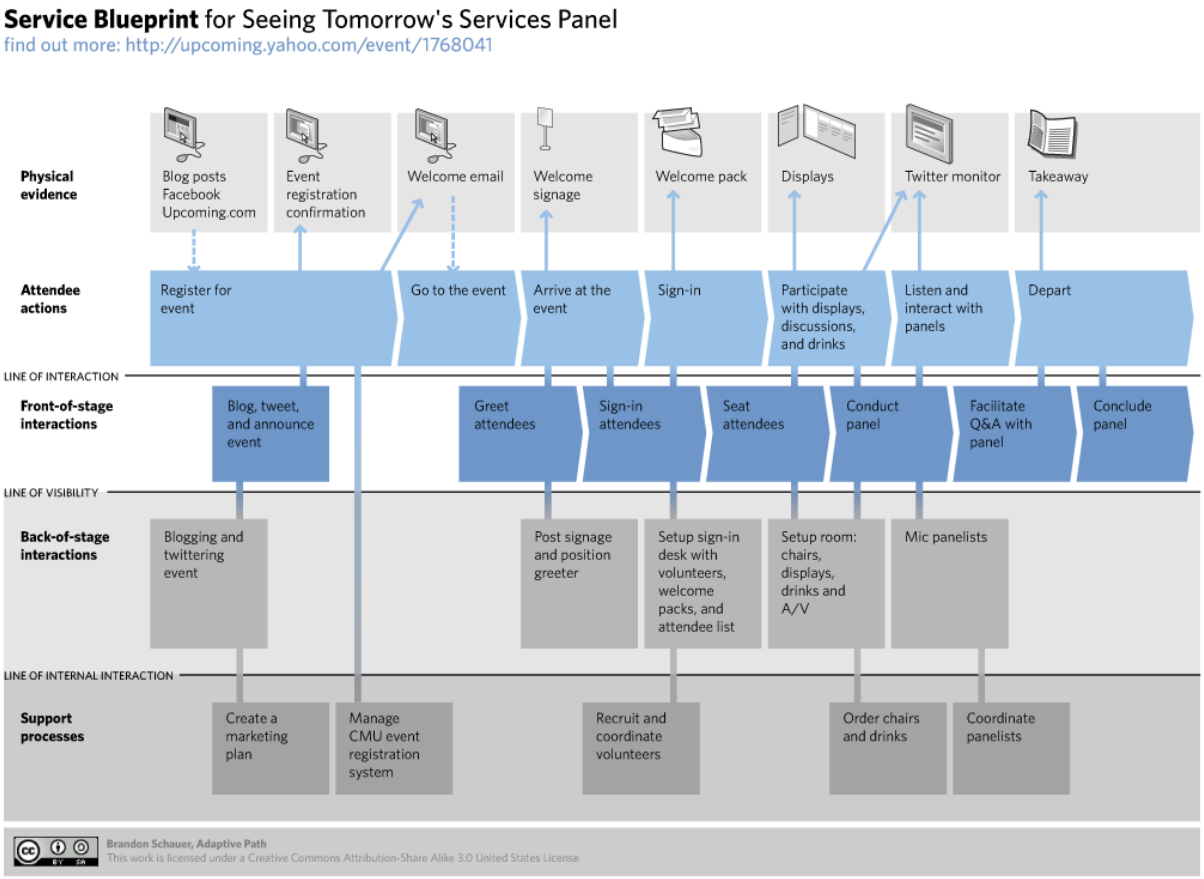


**Figure 12 Example of Service Blueprint**

Source: own

# 4. The course of Design Thinking process in a project

The Design Thinking process in the project was based on this document (chapters 1-3). The Design Thinking tools used in the process were the ones used during workshops organised for member of project consortium (listed below) and during work between meetings in particular institutions. Then the work results were compared and presented during following workshops and became a contribution for further work.

**Table 1 DT workshops in the project**

| Date | Receiving Organisation | Receiving Country | DT phase | Used tools |
|---|---|---|---|---|
| 15.12.2016-16.12.2016 | ITS | Poland | Introduction to DT | |
| 17.05.2017 - 18.05.2017 | 3S | Austria | Empathize | • Stakeholder map<br>• 5 Whys Worksheet |
| 06.03.2018 - 07.03.2018 | TTS | Finland | Define | • Persona Worksheet<br>• Mind mapping |
| 06.09.2018 - 07.09.2018 | TTS | Finland | Define<br><br>Ideate | • Metaplan |
| 12.12.2018 - 12.12.2018 | Grupa CARGO Sp. z o.o. Sp. Komandytowa | Poland | Prototype<br><br>Test | • Mind mapping |
| 05.06.2019 | ITS | Poland | Summary | • Mind mapping |

Source: own elaboration

Results of the Design Thinking process (IO1) were used for planning, testing and preparing final results of Intellectual Outputs 2-7. The most important information (connected with understanding the target group and final recommendations) created as part of DT process are presented in the next chapter.

# 5. Recommendations resulting from the executed Design Thinking process

## 5.1 Barriers – insights from define DT phase (Person) description of the barrier

After carrying out research allowing to obtain data on the project target groups (3 strongly defavoured groups of people on the job market), it is important to collect data into Person prototypes which reflect real people better than dry statistical data. Creating Persons embodying the main representatives of the target group will allow to understand problems and barriers concerning people with major problems on the job market. Qualitative tools, comparing to quantitative tools, help here to better understand the core of the issue and to better solve it. Below is exemplary information obtained from Persons, which were used at later stages of the process.

**Table 2 Recommendations from define phase of DT**

| **Barriers – insights from define DT phase (Person)** ***description of the barrier*** | **NEETs** | **50+** | **Immigrants** | **Relevant for project** | **Sth project can have impact for** | **Action/Recommendation** |
|---|---|---|---|---|---|---|
| Low computer competencies (Kalle Pesonen) | • | | | • | | • Provide ICT support.<br>• Coaching (real or virtual, possibly automated) and a gamification mechanism would be appreciated for their schooling. |
| lack of confidence in computer skills (Taina Ylatalo) | • | | | • | | • Lack of confidence in computer skills, especially with regard to more complex tasks, could be addressed with certain tools using feedback. The power of feedback could strengthen the strong elements of NEETs' performance during the training.<br>• An application or software, which helps to prove one's own skills. |
| patience and focus (Ton Vanhatalo) | • | | | • | | • Gamification could be a solution for problems that NEETs have with patience & focus as well as splitting the training into smaller parts.<br>• Change of the overall attitude of training entities from teaching to learning (provision of the capabilities allowing to learn at individual pace).<br>• Individual approach to the training |

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| | | | | | | could provide a desired level of focus for the trainees (tool for identifying personal characteristics could be a solution for further training customization).<br>• Trainers need a possibility to check the progress schooling participants make in due time, in order to be fully aware about the progress made by the trainees.<br>• Some people need support, so learners can be a bit more patient and can better focus on the matter and be more motivated to do the work/training.<br>• Simulation or something that you can actually do with your "own hands" |
| lack of knowledge about the profession (Sebastian) | • | | | • | | • Basic knowledge about professional drivers (e.g. introducing the profession, benefits, possibilities, work-life balance, non-standard hours) needs to be spread. Project should show role models for different 'flavours' of professional driving categories is crucial in encouraging NEETs to access the profession.<br>• Introducing the professional driver profession as a job that doesn't need many specific skills to obtain.<br>• Indicate ways of becoming a professional driver without investing one's own money<br>• Knowledge about different occupations for professional drivers (e.g. bus driver) needs to be spread.<br>• Short on the job periods where people can actually learn with the profession |
| low motivation (Karol) | • | | | • | | • Indicate the benefits of becoming a professional driver (certain degree of independence, decent wages, possibility of travelling to different locations).<br>• Chat with experienced & passionate drivers in order to boost the willingness to work; show best practices of the life of a professional driver with individual passion, private |

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| | | | | | | life etc.<br>• Introduce alternative 'flavours' of working as a professional driver (show that becoming a truck driver is not the only career possibility within the profession).<br>• Indicate different ways to become a professional driver without investing one's own money.<br>• Revealing the education-targeted character of ICT through a number of innovative tools & methods implemented in the training curriculum (NOTE: young people have a tendency to treat ICT training, e.g. driving simulator, like a toy/computer game). |
| Stereotypes in the trucking industry about women as PD (Ewa) | • | | | | • | • Females are still subject to stereotypes in the trucking industry. It should be pointed out that in the near future, automated driving will alleviate the physical effort of professional driving jobs and therefore, more women should be encouraged to become a PD.<br>• Hence, best practice examples of professional female drivers need to be widely disseminated. It's worthwhile to start with basic things that are often overlooked, e.g. the lack of female persons in dissemination materials addressing the demand of professional drivers.<br>• Possibly a chat with a female professional driver.<br>• Best practice examples should be widely disseminated, e.g. in Czestochowa (Poland) there is a public bus operator where 25% of the driving staff are women.<br>• The Finnish model should be widely disseminated in which bus drivers often take part-time jobs during an early/late part of the day so they can use the rest of the day for taking care of the children.<br>• Change the promotion of professional driving: more women |

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| | | | | | | need to be shown because so far, the PD background is predominantly male (e.g. by introducing more photos of female drivers in the dissemination materials).<br>• Some cases (perhaps video interviews etc.) where women PDs tell how they manage to handle both personal and professional life |
| Aversion to ICT (Matti Korhonen) *Non-ICT-based training seems to be better for 50+ group due to their lower digital competences.* | | • | | • | | • Sometimes people need basic induction for the use of ICT to understand that this might help them to learn more effectively.<br>• Convince people of the educational benefits of ICT-based trainings & support them to overcome their fear towards using ICT technology. |
| Low self-esteem (Mervi) | | • | | • | | • The introduction of a pre-assessment test could provide an answer to the question which persons among the 50+ group are capable of being professional drivers.<br>• Sometimes people need support with how to apply for a driver training and also how to believe in themselves a little bit more – assistance of a personal coach could be an answer for that. |
| low motivation level (Jan, Reima) | | • | | • | • | • Target low motivation level<br>• Indicate different possibilities of working as a professional driver.<br>• Positive and exhilarating training attitude aimed at raising self-confidence.<br>• Careful and targeted use of ICT-based tools in order to convince Jan to its efficiency. |
| physical impairment and cognitive abilities (Stanisław, Robert) *People over 50 years of age tend to have a decrease in physical & cognitive abilities. Their medical problems result in* | | • | | • | | • Customise the training tools to physical impairment & cognitive abilities.<br>• Introduce alternative 'flavours' of working as a professional driver & counsel with regard to a possible profession to be taken with a PD background<br>• Adaptation of tools for teaching 50+ people with lower cognitive skills due to age, support for finding |

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| *vulnerability to physically demanding jobs.* | | | | | | enthusiasm for learning.<br>• Target group needs more time to get along with innovative ICT tools. |
| Personal conviction that traditional training is better (Reima) | | • | | • | | • The introduction of a pre-assessment test could provide information on the question which 50+ persons are capable of doing an ICT training. Sometimes the use of ICT isn't a very good solution – a better solution might be a traditional training, because it might be faster in some cases.<br>• Sometimes people need to change their attitude towards technical innovations and start using them, it's worth to support them in this process.<br>• Offer a basic form of digital competence training inside the individual training curriculum. |
| Cautious promotion of e-learning in the 50+ group | | • | | • | | • The use of e-learning in the 50+ group is a very individual thing. It is worth creating tools for an individual predisposition analysis.<br>• Project should map all project's target groups to gamification profiles, including the study on cognitive abilities of 50+-year-old professional driving candidates. |
| Stereotypes in trucking industry about 50+ persons working as PD | | • | | | • | • Encouraging stakeholders to employ drivers over 50 could be supported by a wide dissemination of good practices from Finland.<br>• Industry advertisements: Raising the awareness and knowledge on the characteristics of professional driving nowadays. Advertise the competences of 50+ year olds. Customisation of the training to their needs.<br>• Knowledge of the average age of PDs |
| Lack of language skills (Igor) | | | • | • | • | • Language skills are crucial due to both trucking companies requirements and the need of passing a CPC exam in the country's official language. The language skills training should be flexible and customised to the needs of a certain |

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| | | | | | | employer (not all drivers have contact with the clients).<br>• Sometimes integration of language training with PD training can give good results.<br>• Design the training in a way that is aimed at people with non-proficient language skills (simplified language) and prepares for the use of specific vocabulary at work.<br>• Introduce a training in which people can choose their own pace of learning.<br>• Introduce intuitive ICT-based training methods.<br>• Coaching to support filling in the application. |
| Maternity leave (Rinna)<br>*Long period of staying without a job due to maternity hinders coming back to labour market, lack of certain training and low/maladjusted education.* | | | • | | • | • External funding for female candidates. Promotion of women as professional drivers – changing the current social perspective.<br>• The Finnish model in which bus drivers often take part-time jobs during an early/late part of the day in order to use the rest of the day for taking care of the children should be widely disseminated. |
| Lack of focus at filling in the applications properly (Hassan)<br>*People from different cultural backgrounds have problems with formalities related with training applications.* | | | • | | • | • Legal unification & simplification of immigrant employing procedures necessary.<br>• A double-check is necessary, because some immigrants use the help of their colleagues to fill in the forms in the proper language. Therefore, an additional interview should be compulsory to actually check the language skills. |
| Positive and truthful information about PD job (Maksym, Nazym) | | | • | | • | • Reveal the image of professional driving based on current market demands (employers are willing to pay for the courses etc.).<br>• Show professional driving as a profession that can provide decent wages for many people, a certain level of autonomy and possibilities to explore one's hobbies and time to |

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| | | | | | | self-develop.<br>• Introduce different paths of professional driver career.<br>• Language simplification (the training should be provided in a simplified language version, yet should also prepare the trainees to learn specific industry vocabulary).<br>• Course of training supplemented with the use of various ICT-based methods.<br>• Put special emphasis on administrative issues ('paper work') connected with professional driving.<br>• Short on the job periods to test PD profession |

Source: own elaboration

## 5.2 Recommendations to use in create Intellectual Outputs 7 of project

Better understanding of defavoured groups on the job market in the project helped create better solutions to test in pilots within the project. The Design Thinking process gave a lot of information which was used to create Intellectual Outputs 2-6 and the final Intellectual Output 7. The most important information used in designing solutions as part of the project is presented below in the form of a mind map.

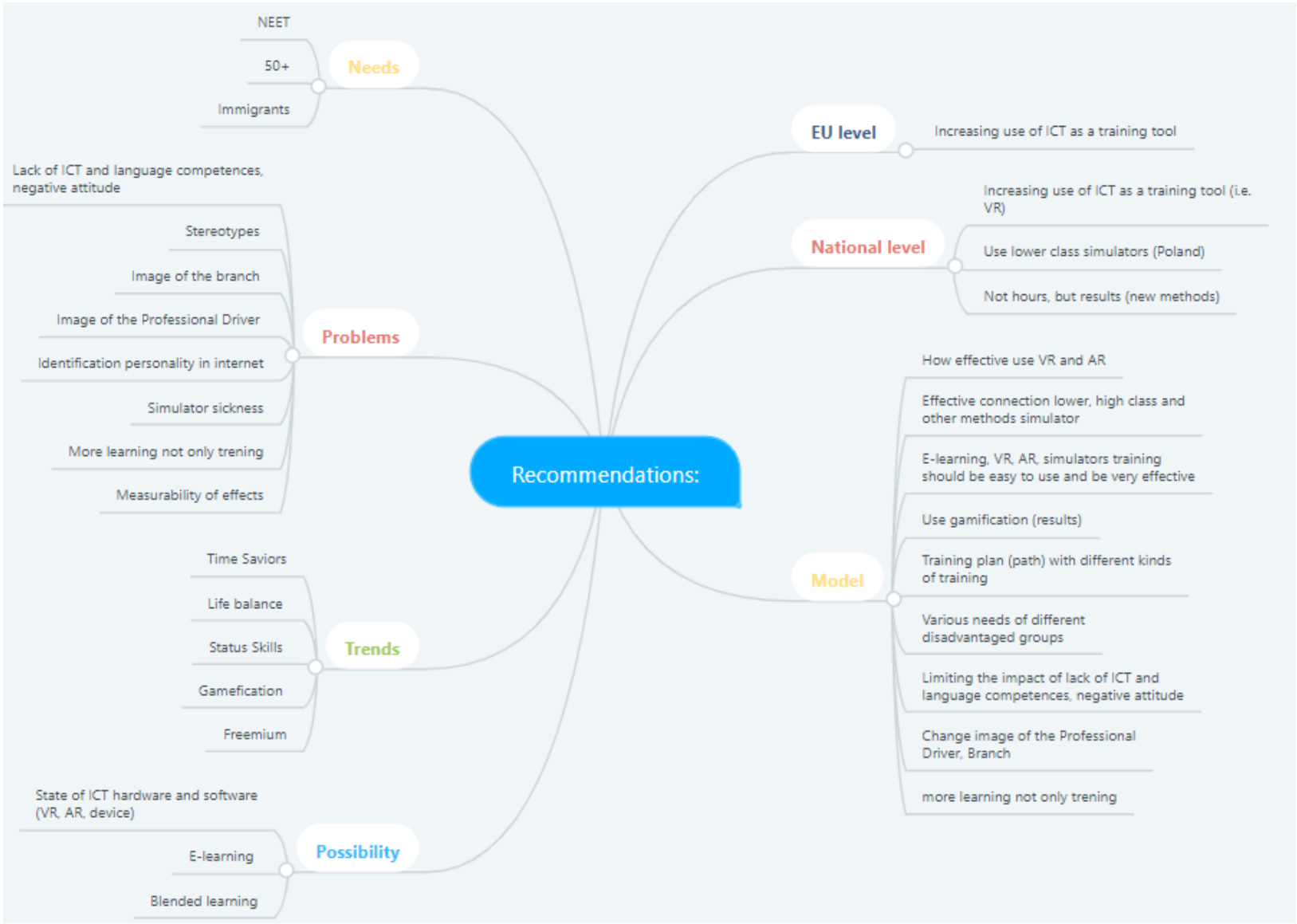



**Figure 13 Mindmap for IO7**

Source: own elaboration

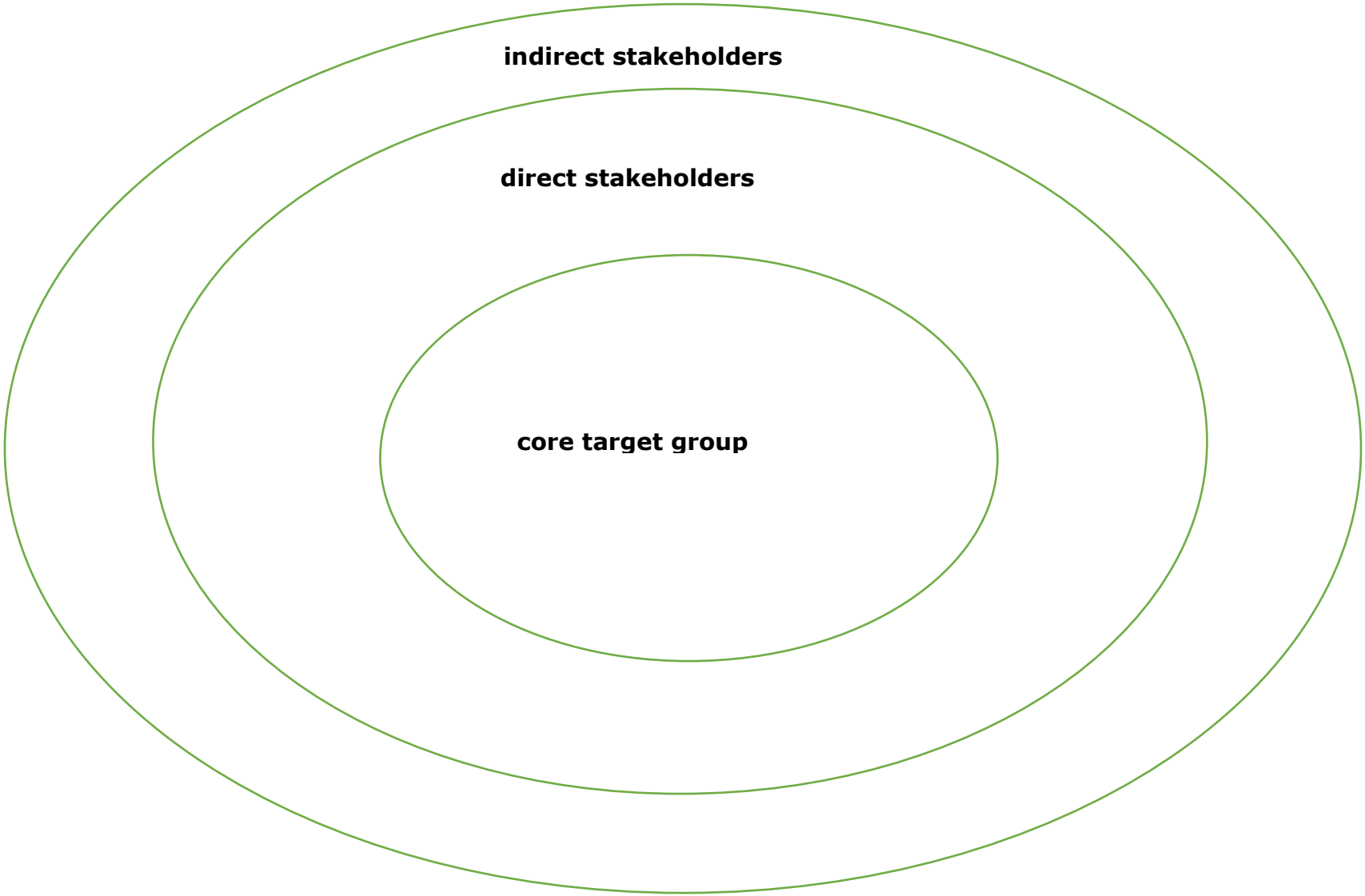
Comparing the status of knowledge at the stage of preparing the project with the knowledge and insights obtained within the Design Thinking process it can be stated that the process allowed to prepare better solutions which better include the needs and barriers of the 3 defavoured groups on the job market because these 3 groups were better understood thanks to the application of the Design Thinking process. The human-centered way is worth using in projects where people are involved because they help create better solutions through stressing greatly the understanding of people, and not immediate attempts to find a solution, when the core of the problem might not yet be known.

# 6. References

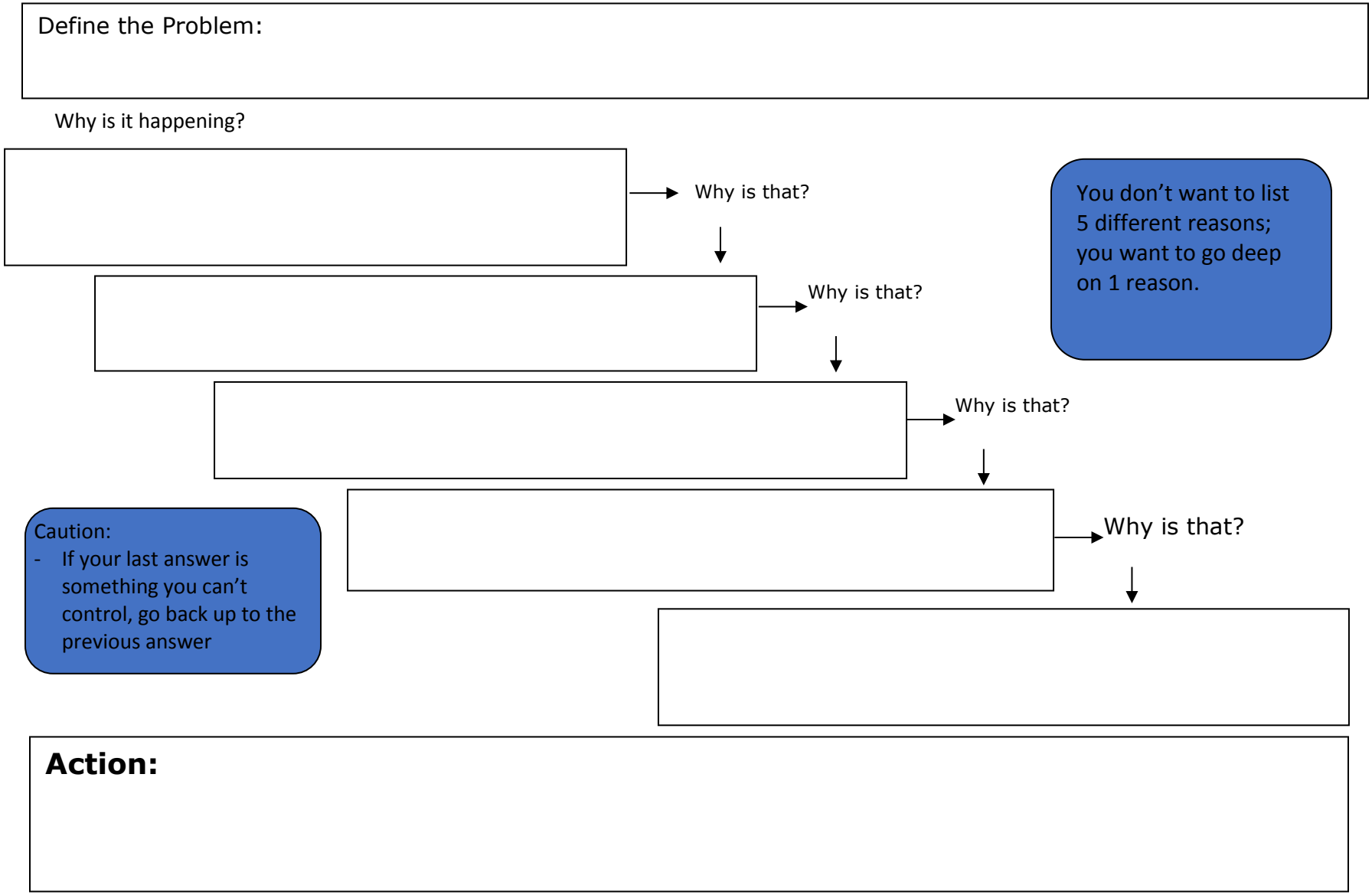
[1] Brown, T. (2009). *Change by design*,
[2] Kelly, T., & Littman, J. (2001). *The art of innovation: Lessons in creativity from IDEO*,
[3] Liedtka, J., & Ogilvie, T. (2011). *Designing for growth: A design thinking tool kit for managers*,
[4] Martin, R. L. (2009). *The design of business: why design thinking is the next competitive advantage*.

# 7.Annexes

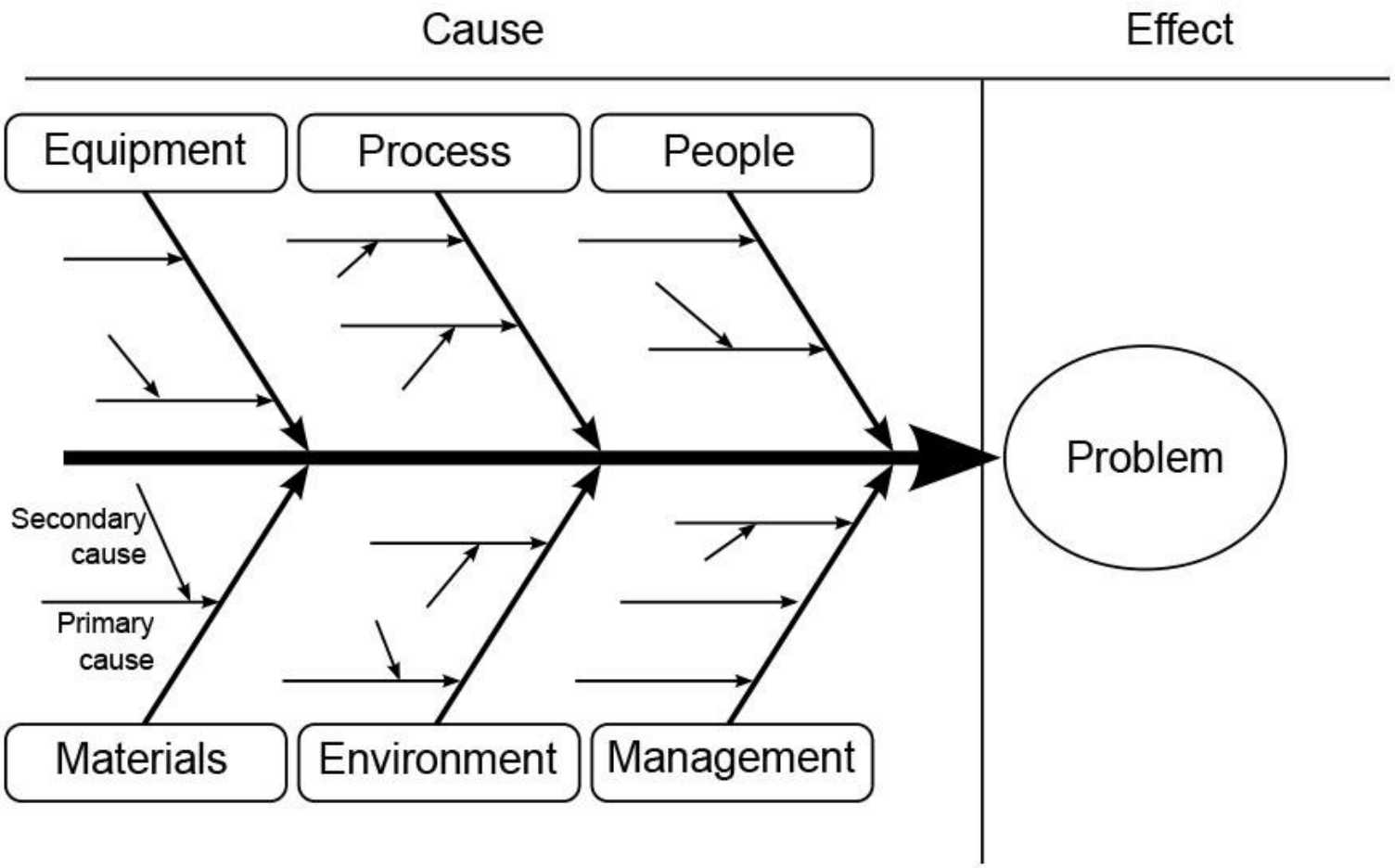
## 7.1 Stakeholder mapping



## 7.2 5 Whys Worksheet



## 7.3 Ishikawa Fishbone Diagram




## 7.4 Metaplan Worksheet

| **PROBLEM:** |
| --- |

| HOW IT IS? | HOW IT SHOULD BE |
|---|---|
| | |
| **WHY IT IS NOT AS SHOULD BE?** | |
| | |
| **CONCLUSION – WHAT CAN WE DO?** | |
| | |

## 7.5 Persona Worksheet

| | |
|---|---|
| Name<br>Age<br>Live in<br>Education<br>Job title<br>Hobbies<br>Quotes about the labor market situation | Photo |
| Important objectives | |
| Family and private life | |
| Motivation | |
| How does his/her ordinary day go? | |
| What does he/she think about working? | |
| Why is he/she unemployed? | |
| How does he/she see the work of a professional driver? | |

| |
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| Can he/she work as a professional driver? |
| Does he/she like to learn new things? |
| What is his/her attitude towards using ICT? Does he/she use it? |
| Would he/she be able to learn using ICT? What specific methods? What does he / she need to learn to be effective? |
| **A summary** of which should be considered when designing solution? |

## 7.6 Title of the newspaper