



# Best Practice for Inclusive Journey Mapping and Diversity in User Participation

Till Halbach<sup>(✉)</sup> , Kristin Skeide Fuglerud , and Trenton W. Schulz 

Norsk Regnesentral, Oslo, Norway  
till.halbach@nr.no

**Abstract.** This work investigates how co-creation workshops, in which user journeys and personas are developed jointly with workshop participants, can be made as inclusive as possible for a wide range of participants and thus personas and journeys. The discussion is based on five recent research projects with 28 workshops in total and more than 78 participants, resulting in 31 user journeys and 25 personas. The lessons learned have been summarized as best-practice recommendations for the implementation of inclusive persona work and journey mapping. It is shown that both physical and virtual journey mapping workshops may result in a great diversity of personas and variety of journeys, provided that the participants are highly diverse, that universally designed tools and aids are used, and that inclusive techniques and protocols are followed.

**Keywords:** Digital inclusion · universal design · accessibility · diversity · design thinking · participatory design · customer journey · persona · scenarios

## 1 Introduction

User journeys, also referred to as customer journeys, is a well known concept in user experience research and service design to tell the narrative of the connection between an organization and a user/customer from the user's point of view [1]. User journeys help organizations understand the experienced circumstances of a series of events by a user regarding the organization, including channels, touch points and key interactions, as well as the users' emotions, needs, preferences, etc. In this work, we refer to a user journey as the combination of a persona/user profile with a particular scenario and a user flow towards the goal in the given scenario. Journey mapping denotes the process of developing user journeys. Here, this is also referred to as workshop.

Since its first introduction in 1998, the concept of user journeys has evolved further and nowadays comes in various flavors and is practiced differently. Journey mapping in a physical setting usually involves tangible tools like wall-mounted paper, sticky notes, stickers and similar. The use of digital tools, such as Mural, Miro, Adobe Illustrator and similar [2], has experienced a considerable boost in recent years for virtual settings, mainly due to the Covid-19 pandemic, which often meant that any user participation could only be done remotely.

However, user participation is often limited by considering an average user, as many tools and associated methods, regardless of being physical or virtual, do not take accessibility for people with impairments into account, such as reduced sensory, motor, or cognitive abilities. As a consequence, users with varying abilities and disabilities are typically not well represented in user journeys either.

The work investigates how journey mapping can be made as inclusive as possible in practice by considering a wide range of users, in particular users with impairments and chronic conditions. The overall objective is a greater user journey diversity and user participation throughout an entire development or research project.

The article is structured as follows. After the discussion of selected related work, we present recent research projects in which personas and journey mapping activities took place and their results in terms of proper methodology. Then, the lessons learned and resulting recommendations are discussed before the conclusion is drawn.

## 2 Related Work

In this section, selected related literature is discussed.

Thinking about and including users in the design of the system tends to lead to a system that is easier to use for the people using the system. Methods of such participatory design have been shown to help include users and democratize the design of systems [3]. Yet, there may be issues that are missed when people with disabilities are only consulted during the evaluation of a solution instead of through the entire process [4].

Research has shown that people with impairments are often not considered in the design of digital solutions, leading to solutions that are inaccessible, or at best challenging to use for people with impairments [5]. Others have noted that activities for generating ideas for a design are often not accessible to people with disabilities, and facilitators should consider adapting activities to include a larger audience [6].

How personas with disabilities can be generated and exploited has been investigated [7, 8]. The authors recommend combining personas with stories and using them both actively together with stakeholders in research and industry projects to help finding accessibility issues and improve solutions' extent of universal design.

The use of inclusive personas has been suggested [9], calling for the participation of a wide set of users with multiple perspectives and a wide spectrum of human experiences. While the author explicitly mentions the benefits of involving people from vulnerable groups and minorities, the concept of permanent, temporary, and situational difficulties would apply to basically anybody and as such can enrich the personal traits of every persona.

The development of personas and scenarios for the representation of the needs of marginalized user groups has been discussed [8]. The authors found that inclusive and participatory persona scenario creation can be a feasible and effective method to supplement other qualitative and quantitative methods to uncover user needs for universal and inclusive design purposes.

The authors from a recent literature review recommend to involve diverse users in inclusive co-creation processes like user groups and workshops [10]. Special attention should herein be given to accessible tools and methods in both physical and virtual sessions.

### 3 Persona and Journey Mapping Workshops

Here, we present five recent research projects in which persona and journey mapping activities were conducted.

#### 3.1 Project 1: Accessible Feedback

In this project, which lasted from 2020 to 2022, 15 workshops were carried out with in total 30 participants. Due to the Covid-19 pandemic, all of these activities were performed remotely by means of video conferencing tools. The work resulted in 13 personas and 14 user journeys, and we also conducted a pilot workshop to test the equipment and methodology.

The context for the journeys were the online services of the Norwegian Labour and Welfare Administration (NAV) who deliver a wide range of public services and social benefits in Norway with regard to work and unemployment, job seeking, illness, workplace facilitation, and many more. User representatives were recruited through the interest organizations participating in the project.

The following scenarios were developed:

- A younger male with mental-health issues and depression tendencies applies for unemployment benefits
- A middle-aged female cancer survivor with long-term issues reports on her employment situation
- A middle-aged female cancer patient with various side effects of the treatment, fatigue and chronic pain applies for social security benefits
- An immigrant worker in his early 30ies needs help to find a job
- A young student applies for assistive technology
- A highschool dropout with a heart failure needs basic advice for his work life
- A newly retired pensioner needs help to sort out an additional tax payment
- An elderly pensioner asks for assistance regarding his pension
- A younger woman with reduced hearing places a registration for an sign language interpreter
- A newly immigrated and separated woman applies for an advance for social security benefits
- A father applies for financial support as a caregiver for his intellectually disabled son
- A male in his early 30ies with ADHD and his mother report on his employment situation
- A male in his early 30ies with ADHD and his mother apply for social-security benefits
- A younger female with limited vision applies for reading and writing assistance

The main target group of the personas and user journeys were the development and design teams at NAV, and the intention was that both should be put up on the office walls. As NAV was not interested in a pleasing graphical design but rather to get as many scenarios as possible, a plain text document was chosen for a persona, and a spreadsheet for a user journey. Please see the description of the “Video for all” project for illustrations and specification of content.

Several of the user journeys also detail the experiences of caregivers, including relatives, guardians, friends, as well as staff and volunteers of interest organizations.

### 3.2 Project 2: Video for All

“Video for All” was active from 2022 to 2023 and dealt with e-consultations in the health sector, for consultations, treatment of illness, rehabilitation, and such.

Three patient journeys and corresponding personas were written in 1 digital and 2 physical workshops with 10 participants in total, 3 to 4 per workshop. The participants were recruited by making contact with relevant health undertakings and interest organizations. Each meeting was carried out by 2 facilitators. The following scenarios were developed:

- A vision-impaired father (in his 30ies) needs a doctor’s eyes on the rash of his daughter through a smartphone
- Treatment of a middle-aged woman with bipolar disorder over a longer time period by means of video communication tools
- An elderly aphasia patient needs a virtual appointment as part of a polyclinic rehabilitation after stroke

The target groups of the personas and patient journeys were mainly health personnel and executives, in particular those with procurement responsibility. Here, personas and patient journeys were the building blocks for guidelines and an e-learning tutorial on inclusive video consultation in the health sector. Therefore, each persona was formulated in a plain list-structured text document with short and keyword-like descriptions, while the patient journey was organized in a spreadsheet. The persona description contains all important personality traits, such as gender, age, health, etc. Each patient journey was put into a tabular format, with the chronological order of events and a detailed description of each event in terms of channel, perceived experience, etc.

### 3.3 Project 3: Capable

The Capable project was funded by the Research Council of Norway and lasted from 2018 to 2021. The aim of this project was to create a digital tool that enables citizens to actively use their clinical and personal health information. The tool concentrated on three areas: medication, nutrition, and coordination of health service information. Persona descriptions together with health history and future scenarios constituted what we call person scenarios. The persona scenarios represented users with various health challenges and impairments with an age range of 23–75 years.

Participants were recruited from three non-governmental disability and health advocacy organizations (NGOs), which were also partners in the project. We conducted five physical workshops at the premises of the NGOs. The participants represented people with rheumatism, people with Chronic obstructive pulmonary disease (COPD), people with cardiovascular diseases (CVD), people with low vision, and people who are blind. There were three user participants in each workshop, fifteen in total. Each workshop lasted around 2–3 h, including a break with some food, and the participants got a gift card as a compensation for their contribution.

There was one researcher leading the discussion, and the discussion’s audio recording was used as support when writing the persona scenarios. This resulted in five personas descriptions with associated health journeys. These journeys contained the details of

how the persona would access, manage and handle information related to medication, coordination, and nutrition. The descriptions were based on the participants' experiences and put into a realistic narrative. The workshop participants were challenged to create scenarios for the use of a tool to help the persona to overcome some of the previously identified challenges.

The following persona scenarios were developed:

- A 43-year old female with arthritis and fibromyalgia, who is forced to handle a large number of different medications, and combined with outdated information at various healthcare actors
- A 69-year old male with tablet- and diet-regulated diabetes II and elevated cholesterol, going through rehabilitation after a heart attack and a coronary artery bypass (PCI) surgery, where the medicines after PCI cause potency problems
- A 23-year old male from a minority group, with retinitis pigmentosa (RP) and reduced vision and acuity and a progressive eye condition
- A 63-year old female with diabetes I and glaucoma, who lost her vision gradually until it was diminished completely
- A 75-year old female with gene-triggered COPD grade 3, which started with asthma and bronchitis when she was a child

The persona scenario descriptions target mainly the R&D development team. They were analyzed together with results from other user-centered design activities to create the requirements for prototype solutions [11]. Each patient story was based on a template with headings or prompts to describe various aspects of the persona and health journey, including personality traits, gender, age, education, work, ICT experience, values, health challenges connected to medication, coordination and nutrition, as well as suggestions for new tools. The persona scenario was summarized as a mixture between free text and bullet points.

### **3.4 Project 4: iStøtet (IT Support for Visually Impaired Elderly)**

The aim of this project, lasting from 2019 to 2022, was to explore barriers and seek to find solutions to achieve increased mastery and use of smartphones by elderly people with a visual impairment [12].

Among the methods used in the project were persona and user journey workshop. We conducted two workshops with participants recruited from local county groups of the Norwegian Association for the Blind and Partially Sighted. There were six participants in each workshop, and each was organized as two groups with three participants. Each group created one persona and user journey with focus on the challenges of being part of the information society, including motivation, access to teaching resources and support. In each group there were one researcher who led the discussion and one participant from the project group who assisted with note taking. Although the discussion was quite free, the researcher tried to ensure that the group covered all aspects of a template that was prepared in advance. The template contained the attributes gender, name, age, place of residence, life situation, personality traits, values, disability or disease, education, work, ICT usage, assistive technology, ICT skills, interest in and motivation for learning technology, training in technology and technical barriers.

The following four persona scenarios were developed:

- A 75-year old female with low ICT literacy and reduced residual vision due to age-related macular degeneration (AMD), facing more and more information barriers, further affecting her psychological and physiological well-being
- A 77-year old male with a technical education and ample experience and interest in the use of ICT, who is affected by AMD and a gradual deterioration of eyesight, and who experiences various challenges when using a smartphone without sight, and under educational training
- A 51-year old well educated female physiotherapist with deteriorated eyesight, who had learned and mastered technology and assistive technology well, both at work and privately, and who feels forced to apply for social benefits after a longer struggle against a variety of ICT barriers, in particular the one caused by the upgrade of a domain-specific software system, which made work impossible for her
- A 63-year old woman who lost her sight completely in one eye and almost in the other due to blood infection, who encounters various challenges with finding public information, and who needs to turn to a number of public actors and undergo different types of training

The persona journeys were summarized in free text as a coherent four- to five-page story. The target group of the persona journeys are mainly politicians, the public sector, municipal authorities and other visually impaired people. As it is challenging to convey such long stories in presentations, short versions of the stories have been made. One of the persona journeys will also be published as part of a podcast series by the Norwegian Association for the Blind and Partially Sighted.

### 3.5 Project 5: Close the Gap

“Close the Gap” is a Norwegian public innovation project that started in 2021 and is still running. The goal of the project is to develop simulation training that can prepare healthcare workers to share and communicate information with each other in the context of patient home visits. Some care workers may not have received the necessary training before they are out in patients’ homes. The project’s objective, though, was not to map a patient’s journey, but to find vignettes or small, repeatable sets of events which occur in a home visit, and which can be used in multiple simulation scenarios [13].

One in-person workshop was carried out with nine participants and five researchers. The participants were general practitioners, nurses, and advisors in three municipality development centers for nursing homes and home health care. Before the workshop, we had created two example journeys that were elicited with the help of a healthcare consultant involved in training in this area. The example journeys depict a patient at home with a deteriorating condition. We presented these journeys to the participants and pointed out examples of situations of a possible repeating pattern, but we also stressed that there could be other variations to the journey.

We then split the participants into three groups for working on creating possible vignettes based on concrete examples. There was no recording of the workshop to avoid accidental capture of personal information of other people not participating (e.g., anecdotes of a patient visit), but researchers took notes to capture any issues that were raised.

For capturing the vignettes, we used a spreadsheet for each group. Each group, however, used the spreadsheet a little differently. For example, one group worked jointly on the worksheet after some initial discussion, another group talked and worked on the whiteboard before they transferred the information to the worksheet.

The groups had only an hour and 45 min to create the vignettes. But by the end of the workshop, we had five vignettes, covering different ways of how a patient's condition could worsen and how the tools could be used to discover this and to communicate this with other healthcare workers [14]. The vignettes have been used for further development in the simulation scenarios.

## 4 Results

This section summarizes the persona and journey mapping activities and methodological results across all aforementioned projects.

All projects have in common that personas and journeys were developed in a co-creation process between researchers/facilitators and user/patient/client representatives. This is in accordance with practitioners' view that involving users is the most important factor during the mapping process [15]. One project consisted solely of virtual/remote activities, three projects had carried out in-person meetings only, and one project had both virtual and physical meetings. In total, 28 workshops with more than 78 participants in total were carried out, and 31 user journeys were developed along with 25 personas and scenarios.

The workshop participants were recruited with the help of the civil-society organizations involved in each project. A great share of participants had sensory and cognitive challenges including reduced or no vision, reduced hearing or deafness, anxiety and/or traumas, dyslexia, and various mental degradations common among elderly. Another share had chronic conditions, such as aphasia and conditions common among cancer survivors. A third group of participants were immigrants and people with a foreign culture, meaning foreign-language speakers. In some instances, we also invited helpers from the aforementioned organizations, as well as close relatives, such as parents and other caregivers, to the workshops. Project 5, however, was the exception as none of the participants had known disabilities.

While all of the pre-Covid-19 projects held physical workshops, such activities became entirely virtual during the pandemic, and since 2022 we use both depending on the circumstances. However, none of the workshops has been hybrid yet. In virtual settings, we typically make use of video conferencing software such as Microsoft Teams and Zoom for direct communication, and plain text documents and spreadsheets (Google Docs and Sheets) for joint collaboration. Both are reported to have good accessibility for virtual meetings [16, 17]. In physical settings, a workshop is carried out quite similar to a focus group, relying solely on oral information, that is, without the use of tangible tools.

Our experiences with both physical and virtual user journey mapping show first of all that it is possible to conduct virtual workshops in an inclusive manner for a diverse population. That is, we were able to write detailed descriptions of personas and their experiences in the form of user journeys, all of which were quality assured and

finally accepted by the participants. With virtual workshops, it was not only possible to continue the research and development during the pandemic at all, but virtual journey mapping offers also multiple advantages: It can be argued that virtual meetings allow for a wider geographical spread, that they require a reduced investment of the participants' time, and it is reportedly easier for the participation of certain user groups, in particular those who experience more challenges with travel than the average. As such, virtually conducted workshops contribute to more diversity in the population. On the other hand, virtual workshops are likely to exclude individuals with low IT and ICT literacy, or who lack such skills entirely. Some participants were also attracted by the social aspects of physical workshops in particular, where they could mingle with "peers" and exchange experiences, which is an important factor that is often missing in virtual settings.

During the journey mapping, it was crucial to accommodate for the needs and preferences of each participant. For instance, while we relied on screen sharing and the conveyance of visual information for those with a hearing impairment, as well as sign language interpreters, the strategy followed for individuals with a vision impairment was oral communication, such as read aloud strategies. For people with anxiety, we offered one-to-one sessions, whereas for those with low IT literacy, we asked technically savvy helpers to join a (virtual) workshop. Ideally, physical workshops would be the preferred workshop format for reaching those target groups.

## **5 Discussion of Results, Lessons Learned and Recommendations for Inclusive Journey Mapping**

In the following, the lessons learned from conducting personas and user journey workshops are discussed, together with our recommendations for developing user journeys with a high degree of diversity. The recommendations are structured in groups of recommendations related to each other, and they have been derived based on the discussion of experiences with inclusive workshops by the researchers involved in each project.

### **5.1 Participants**

We got good results in the form of a wide spread of stories about user experiences when both participants with their individual-level experience, i.e. end users, and representatives from civil-society organizations participated in the workshops. In most cases, these representatives not only know the wide range of user needs but also challenges and core issues across the entire organization, and often they may act as stand-ins for multiple users and thus increase a workshop's level of diversity. Regarding personal users, the recommendation is to prioritize people with reduced functional abilities (sensory, motor, cognition or compound issues), people with a migration or other cultural background, as well as the elderly, who often have low ICT skills and multiple impairments. The goal of this is to increase the diversity of the final product, i.e., user journeys, and to be able to quickly and efficiently uncover so-called pain points, or problematic areas, as compared to average users.

When it comes to the recruitment of users and user representatives, we recommend contacting non-governmental organizations and national interest organizations such as



the Association of the Blind and Partially Sighted, the Association of the Deaf, the CP Association, etc.

It can be beneficial not only to include personal users, but also related roles such as relatives, helpers, assistants, guardians, etc. to highlight any challenges from their point of view as well. It would be wise to hold separate workshops where personal users and other roles are not mixed.

We recommend 1 to 3 user representatives with roughly the same background and similar experiences. For individuals with psychological challenges (e.g. social anxiety), there should not be more than one. Otherwise, one should aim for 2 to 3 participants to avoid having to cancel in the case of no shows. In case of more participants, one runs the risk of the situation becoming too chaotic, or that someone will not speak up. A similar background is important so that the participants can agree on a common story that everyone can identify with. This will also make it easier for everyone to participate in the discussion and to contribute.

The recruitment itself and the background of the participants can in practice not be controlled entirely, and thus there will always be an element of uncertainty. We have had participants both with and without assistive technology, and with a PC, tablet or smartphone, i.e. large, medium and small screens. Many of those with small screens have had difficulty reading any shared screen content and can hence be categorized as being visually impaired. When there are too different backgrounds, it could be beneficial to divide the group into several workshops with smaller groups using break-out rooms.

Other than that, it has been shown to be advantageous to gather users who need a particular interpreter, say a sign language interpreter, in the same group.

## 5.2 Methodology

Conducting workshops as virtual/digital video meetings has multiple advantages as compared to physical meetings. Typically, this makes it possible to recruit participants with a greater geographical spread and thus greater variety in background. Many participants also said that they were glad that they did not have to travel to a venue to take part in a workshop. Sometimes, for instance during the Covid-19 shutdowns, virtuality was the one thing that made it possible to hold workshops at all. This is contrasted by another share of participants who underlined the advantage of gathering in a physical and thus social setting, and who pointed out the importance of a paid lunch. The type of the meeting (virtual/in person) should therefore be carefully considered with regard to circumstances such as travel restrictions, distance, possible impairments among individuals in the target group, etc.

Our projects showed the importance of pointing out to the participants that a persona is an artificial person, and that a user journey – though rooted in reality and the participants' own experiences – partially may be made up and condensed from multiple experiences. As such, events, names and other circumstances are anonymized, and participants can think and speak freely without having to state whether they are telling their own, a friend's or fictitious experiences. It also enables them to reflect on each other's experiences, compare their own experiences to those of other participants, etc. This is in contrast to focus groups, where participants may hesitate to disclose their experiences [8]. In such cases, it might be crucial that the service owner not be present, such that the

participants utter their opinion more freely. For participants with almost traumatizing experiences with owners of digital services in the past, a persona's third view may almost have a therapeutic effect, as this adds a certain distance to their memories. One should nevertheless be ready to handle strong emotional reactions from the participants, and a listening, understanding, and empathic way of being is essential.

In principle, the duration of a workshop and any breaks should be agreed upon individually with the participants. In virtual workshops, we have had good experiences with sessions of two hours and a 10-min break after approximately one hour for participants with "average" cognitive capacity. In case of fatigue, for example, it would be appropriate to have shorter meetings and more frequent breaks.

A workshop duration of 2 h means little time to develop an entire persona and the accompanying user journey. We therefore recommend to either start with the user journey and ask the participants to find a common experience they could build on first, and fill in gaps in the persona in the last 20 min or so of the workshop, or to switch forth and back between persona work and journey mapping. Usually, many details of the persona fall into place during the development of the user journey anyhow. Our experience is also that most informants quickly understand the task after the initial explanation, in particular when they are shown/told about the respective templates for collaboration.

The number of workshop facilitators will depend on the number of participants and their background. We have used 1 to 3 facilitators with good results. One facilitator may be enough if the person in question is experienced enough, and if the groups are homogeneous. However, then one will not be able to divide the participants into several breakout groups if necessary. Multiple facilitators also provide the opportunity for a debrief afterwards to reconcile impressions. It is an advantage to have several facilitators in the case of many elderly people, people with psychological or cognitive challenges and people with multiple assistive technologies.

Particularly in virtual meetings, it has been very important to make audio recordings in order to be able to go through the recording afterwards and extract more information for the persona and the user journey. However, in physical meetings and with multiple facilitators, taking notes has in general been sufficient. The transcription of any audio recordings has been deemed as not necessary.

The facilitators may type directly into the digital documents / templates as the participants speak, so that both persona and user journey are being developed continuously. In virtual workshops, the documents were shared with the participants by screen sharing, as well as reading aloud what was written. Visual sharing of the screen is particularly important for those with reduced hearing, and reading aloud works well in most cases for blind participants. Sometimes, we also shared document links, so that the participants could write directly into the templates, but almost no one made use of this, and therefore we dropped this in later workshops.

Both the persona and the user journey will typically need to be complemented and partly rewritten after the workshop, as the facilitators won't have time to fill in all the information in the right places immediately, and because the "temperature may rise" when participants talk at a high pace and simultaneously. In addition, some narratives are very complex and might have many elements. As a result, both the persona and the user journey should be reviewed and quality assured by the participants. It is therefore

recommended to come to an agreement with the participants to send over both documents for approval afterwards. In our projects, the participants have always accepted this request. Typically, there have been few proposals for changes afterwards.

During the last 5 to 10 min of a workshop, it is beneficial to ask the participants regarding their opinion about the workshop and how the journey mapping could be improved. This gives the opportunity for a continuous improvement of the methodology.

It is important to find out about any personal requirements and needs before a workshop, so that it is easier to plan the appropriate number of facilitators. An introductory round at the start of the workshop to clarify challenges, equipment, experiences and expectations is beneficial.

Next, it is advantageous to attach an information letter about privacy, the workshop and the journey mapping process in the meeting announcement, so that the participants have time to read it in advance. This to save time during the workshop.

### 5.3 Tools and Digital Environments

For the persona work, we have used a slightly modified text document template from previous research projects. This template has been shown to work very well for creating a fictitious but believable person. It contains the descriptions of the following traits: Gender, age, municipality, situation in life, possible illness, impairments, and chronic conditions, personality, education and/or work, ICT literacy, as well as important life events. It is complemented by a name and a facial picture.

In Norway's public sector, the Norwegian Association of Local and Regional Authorities (KS) offers a user journey template for journey mapping [18], but the spreadsheet turned out to be far too large and also had to be adapted to some extent. Among other things, we have made the sheet smaller so that it can easier be screen-shared, removed redundant fields, improved the evaluation scale, etc. But even the simplified sheet had several fields that were rarely used in our research projects. The user journey sheet has therefore been further simplified and contains now only the following fields: Columns mirror the chronological order of events (steps), and each step is a compound of the most important event descriptors: Action, contact point, channel, equipment, and personal experience, as well as feedback in terms of criticism and praise and improvement suggestions.

We used text-based, i.e. not graphical, tools to avoid making it difficult for visually impaired to participate, especially since many of the graphic tools are said not to be universally designed. In practice, the workshop participants did not write much themselves, but rather they liked to read what was written in the templates by the facilitator. It is also important that the participants are able to review the completed text afterwards in an accessible format. Our approach was to give the participants access to the documents directly in the cloud (Google Drive/Docs/Sheets), and this has worked well, also for screenreader users.

We have used Teams as a meeting tool, which has proven to be fine for that purpose. The challenges some participants had (and sometimes also facilitators) were related to problems with logging in, sharing the screen, especially with a screenreader, that the chat area sometimes did not update, etc. Navigating inside Teams using only the keyboard was also challenging for some. Most participants had the microphone on all the time,

so that they could speak at any time. With such small groups as we had this was not a problem. The chat channel was, among others, used to share URLs, but when that didn't work, we used email as a backup. Generally speaking, it is wise to take into account some start-up delays related to the technical setup right before / in the beginning of meetings, that is, for checking that the sound is OK, that everyone can see, has access to the documents, can use the chat area, etc.

When sharing the screen, it has proven to be an advantage with multiple computer screens (or application windows); one for the common document (text or spreadsheet), and one for the participants, their facial expressions and their body language.

Among some elderly people and people with low ICT skills, it has been challenging to handle digital meeting invitations and calendar entries. We have therefore made good experience with sending out reminders by email no later than the day before the meeting, where the use of digital meeting tools was also explained. In addition, it was useful to provide the meeting leader's telephone number as an alternative communication channel. Several participants have made use of this in the event of technical difficulties, delays and other unforeseen events. Also finding the right time using tools such as Doodle has been challenging for some participants and therefore needs to be explained / helped with.

## 6 Conclusion

We have presented five projects where personas were developed and journey mapping activities were carried out in a joint manner in workshops with user (patient) involvement. The implications of how the workshops were conducted in detail in terms of modality, tools and aids, participant background, recruitment, etc. have been discussed for the entirety of projects. The lessons learned in the process have further been summarized as concrete best-practice recommendations for the implementation of inclusive persona work and journey mapping.

Our experiences show that it is feasible to conduct both physical and virtual journey mapping workshops with valid and good results, resulting in convincing personas with a high degree of diversity and realistic journeys that describe a great variation of experiences. It is crucial to involve participants with a wide range of backgrounds and traits, in particular users with impairments/disabilities and chronic conditions, to make use of universally designed tools, aids and other means, and – more importantly – to adhere to inclusive methods, techniques, and protocols.

The recommendations of this work may contribute to a greater variety of personas and journeys with a high degree of diversity in the future.

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