Diversity, equity and inclusion in the design of digital public services

Case: Digitalist Group

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Digitalization challenges the public sector to pay increasing attention to designing digital public services inclusively, so they serve even the most vulnerable in society. As a consulting firm serving the public sector in designing and developing digital public services, Digitalist Group has recognized the need for tools and guidelines to support the systematic inclusion of diversity, equity and inclusion (DEI) in the design process.

The purpose of this thesis was to understand what diversity, equity and inclusion mean in relation to the design process of digital public services. The research sought to identify current challenges faced by designers and development professionals in including DEI in the design process. The objectives of the thesis were to identify how DEI could be systematically incorporated in the design process of digital public services in the future and to develop a concrete set of guidelines and tools that designers can utilize as support when designing digital services for the public sector.

The theoretical framework introduces the society-wide realities that lie in the background of designing inclusive digital public services. The way people interact with authorities is changing as public service provision is transforming from analog government to eGovernment and digital public services. Moreover, in Finland everyone has the right to access public services, also the digital kind. The theoretical framework also discusses the principles through which inclusive digital public services should be designed. A truly inclusive digital public service draws on the principles of inclusive design, accessibility and human centered design.

The thesis was conducted as a case study process utilizing service design methods and approaches. The research process included a literature review, a survey, interviews, workshops and a design probe. Through an iterative process, the research produced the Diversity, equity and inclusion design process, which acts as a checklist on how to systematically include DEI in the design process and three tools that designers can use as support in designing inclusively.

The recommendations and outcomes of this thesis are valid for both the private sector and the public sector. Moreover, the outcomes provide value both on the level of the individual designer who wants to be more inclusive in their design work and at the company level for Digitalist Group in designing digital public services more inclusively.

Keywords: Digital public services, diversity equity and inclusion, inclusive design, design for all

Michelle Sahal Estimé

Moninaisuus, yhdenvertaisuus ja inklusiivisuus julkisten digitaalisten palveluiden

muotoilussa – Digitalist Group tapaustutkimus

Digitalisaatio haastaa julkisen sektorin kiinnittämään enenevästi huomiota julkisten digitaalisten palveluiden muotoiluun inklusiivisesti, jotta ne palvelisivat myös yhteiskunnan heikoimmassa asemassa olevia. Digitaalisia palveluita julkiselle sektorille tuottava konsulttiyritys Digitalist Group on havainnut tarpeen työkaluille ja ohjeistuksille, jotka tukevat moninaisuuden, yhdenvertaisuuden ja inklusiivisuuden sisällyttämistä muotoiluprosessiin.

Tämän opinnäytetyön tarkoituksena oli ymmärtää mitä moninaisuus, yhdenvertaisuus ja inklusiivisuus tarkoittavat julkisten digitaalisten palveluiden muotoiluprosessissa. Opinnäytetyössä pyrittiin kartoittamaan muotoilijoiden ja kehittämistyön ammattilaisten nykyisiä haasteita näiden periaatteiden sisällyttämisessä muotoiluprosessiin. Tavoitteena oli selvittää kuinka moninaisuus, yhdenvertaisuus ja inklusiivisuus voidaan tulevaisuudessa systemaattisesti sisällyttää julkisten digitaalisten palveluiden muotoiluprosessiin. Lisäksi tavoitteena oli kehittää konkreettisia ohjeita ja työkaluja, joita muotoilijat voivat hyödyntää suunnitellessaan digitaalisia palveluja julkiselle sektorille.

Teoreettisessa viitekehyksessä esitellään ne yhteiskunnalliset tekijät, jotka vaikuttavat inklusiivisten julkisten digitaalisten palveluiden muotoiluun. Julkisen hallinnon digitalisoitumisen myötä ja digitaalisten julkisten palveluiden yleistyessä tapa, jolla olemme vuorovaikutuksessa viranomaisten kanssa, on muuttumassa. Lisäksi Suomessa jokaisella on oikeus julkisiin palveluihin, myös digitaalisiin sellaisiin. Teoreettisessa viitekehyksessä käsitellään myös periaatteita, joiden avulla inklusiivisia julkisia digitaalisia palveluja tulisi muotoilla. Inklusiivisen digitaalisen palvelun muotoilu perustuu design for all sekä ihmiskeskeisen muotoilun periaatteille ja täyttää saavutettavuusdirektiivin kriteeristön.

Opinnäytetyö toteutettiin tapaustutkimuksena, jossa hyödynnettiin palvelumuotoilun menetelmiä ja lähestymistapoja. Tutkimusprosessi koostui kirjallisuuskatsauksesta, kyselystä, haastatteluista, työpajoista ja muotoiluluotaimesta. Iteratiivisen prosessin avulla tutkimus tuotti muotoiluprosessin, joka keskittyy moninaisuuden, yhdenvertaisuuden ja inklusiivisuuden sisällyttämiseen muotoiluun. Prosessimalli toimii tarkistuslistana sille, kuinka nämä periaatteet voidaan systemaattisesti sisällyttää muotoiluprosessiin. Lisäksi tutkimus tuotti kolme työkalua, joita muotoilijat voivat käyttää tukenaan inklusiivisessa muotoilussa.

Tämän opinnäytetyön suositukset ja tuotokset pätevät sekä yksityiselle että julkiselle sektorille. Lisäksi tulokset tuottavat arvoa niin yksittäiselle muotoilijalle, joka haluaa olla inklusiivisempi työssään, kuin Digitalist Groupille kokonaisuutena inklusiivisten digitaalisten palveluiden muotoilussa.

Keywords: Julkiset digitaaliset palvelut, moninaisuus, yhdenvertaisuus, inklusiivisuus, inklusiivinen muotoilu, design for all

Contents

1   Introduction

Digitalization is a global megatrend, which has changed the way society functions. Great advances have been made in all sectors of society, with the private sector ushering the way and the public sector slowly but surely catching up. Digital transformation is here to stay and the Covid-19 pandemic has expedited change even in areas of society that were previously behind on digital transformation.

With digitalization comes great global advances, the world is more interconnected than ever and new technology and inventions are contributing to scientific advances within all spheres of society. Nonetheless, this development has not been equal and many have been left behind. In the 1990's the term digital divide emerged to describe the divide between people who have access to the internet and those who do not (Pierce 2018, 1). Since then, several researchers have studied this digital divide from the perspectives of access to the internet, usage of digital services and lately also in relation to other socioeconomic determinants, such as age, ethnicity, gender, level of education among others (Wessels, 2013, 18). Not only does the access and usage of technology impact existing inequalities in information society, in recent years increasing inequalities have been identified also within the actual design of digital services, as well as in the functioning of technology. We now know that artificial intelligence and machine learning adopt the biases of the people creating the algorithms, similarly the design of a digital service can exclude users who do not speak a specific language or have 20/20 vision if these aspects are not focused on during the design process.

Knowing the potential harm that can be caused by digitalization, it is particularly important to focus on topics such as diversity, equity and inclusion now in order to avoid both transferring the existing inequalities from the physical world to the digital and avoid creating new inequalities in the digitalized world of the future.

1.1   Background

One of the biggest challenges of our time is to get digitalization right, in a sustainable and equitable way. If we fail, we risk a number of negative consequences, such as increasing economic and social inequalities both between countries and within countries. (Sahal Estimé 2021.) Through the digital divide, inequalities from the physical world have been seen to transfer over to the digital world. Social, economic and cultural inequalities both exist and are magnified in the digital sphere. (Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation 2020, 8.) One example of this is the different levels of internet use between men and women. Globally in 75% of

countries more men use the internet than women. This type of disparity is also visible for other population groups, such as migrants and refugees, children, young people and ageing people, people with disabilities, indigenous peoples and people living in rural areas. (Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation 2020, 8.) Hence, if we fail to recognize these disparities and fail at creating inclusive technologies, we might unwittingly create an even more unequal world where digital services only serve some of us (Deganis, Haghian, Tagashira & Alberti 2021, 1). There's already plenty of concrete examples where AI based products and services have adopted bias and only work for some people, leaving large parts of the population behind.

The United Nations report that the forced acceleration of digital transformation during the Covid-19 pandemic has led to vast opportunities in terms of digital inclusion. Opportunities such as e-commerce, digitalization of public services such as education and health services, social protection initiatives and digital finance have given rise to new income earning opportunities, enabled children to continue their education and brought Covid-19 related information to communities around the world. (Deganis et al. 2021, 1.) In these cases digitalization has brought great benefits to people who may have otherwise not been able to reach these services in the midst of the pandemic. Deganis et al. (2021, 2) call rapid digital transformation a "double-edged sword for social inclusion efforts". Although great advances have been made, particularly in the recovery efforts of the Covid-19 pandemic, the world has also seen a steep increase in digital inequalities, further distancing the digital have nots from the haves and widening the digital divide in the process.

In 2020, 25 years after the term digital divide emerged, Robinson, Schulz, Blank, Ragnedda and Ono (2020, 1) discussed both legacy inequalities and new and emerging inequalities in the information age. The legacy inequalities consider the three tiers of digital divide: access, use and outcomes. Also Deganis et al. (2021, 4) see the digital divide as a multifaceted phenomenon with several layers that have to be addressed as a whole. To this end Robinson et al. introduce the concept of a digital inequality stack which is a multilayered approach to viewing the inequalities currently present and emerging in the digital world. The digital inequality stack includes considerations ranging from access to networks, hardware and software, digital literacy and IT skills, the different ways people consume and use the internet to how the services have been produced and coded, and beyond. (Robinson et al 2020, 1.) All of these layers must work in unison for the outcome to be as equitable as possible. Robinson et al. (2020, 2) argue that new disparities arise from every IT advancement and therefore the social inequalities within the digital world continue increasing. Further they argue that social inequalities in the physical world are strongly linked to inequalities in the digital world. The legacy inequalities causing digital inequalities within countries include disparities caused by socioeconomic status, such as economic class, gender, sexuality, race and ethnicity, ageing, disability, access to healthcare, level of education and rural vs urban

residence. In a second article, Robinson, Schulz, Dunn, Casilli and Tubaro (2020, 3) introduce new and emerging forms of digital inequalities arising from the newest advances in IT. They argue that automation, big data and algorithms, platform economy, cybercrime and conversely cybersafety, civic engagement, mobility, gaming, emotional well-being, and assistive technologies all are new technological phenomena which carry multifaceted implications on increasing social inequalities in both the physical and digital worlds (Robinson et al 2020, 2). As the digital inequalities impact all digital technologies throughout society, we must also consider the impact of digitalization and digital transformation on all aspects of society, including economic, social and political (Robinson et al 2020, 3).

Criado Perez approaches the same topic from one specific perspective, using the gender lens. She describes (2019, 17-41) how the world as a whole has been created to reflect the realities of one dominant segment of the world population. The white man. She describes the phenomenon as early as the fourth century BC in Aristotle's writings and gives concrete examples in today's world where the male perspective is considered the universal experience. (Criado Perez 2019, 17.) The main reason she presents for this is the lack of data. Traditionally data has not been disaggregated by gender and therefore in many cases the male realities dominate the data. (Criado Perez 2019, 11.) From her writing, it becomes increasingly clear to the reader that everything around us is developed with the male experience at the center, unless another perspective is purposefully and meaningfully selected.

This also applies to the digital world. Technology is evolving at an incredible speed and products and services are becoming increasingly digital. Examples of technology that has failed to incorporate women in the design, and therefore serve women significantly worse than men, include smartphone screens and speech recognition software. Similarly to Robinson et al. (2020, 2), Criado Perez (2019, 12) also highlights AI based algorithms as biased, as they have been trained using data that does not separately include data on women. When discussing design for all, the inclusion of women has been studied further than the inclusion of other minority groups. Several of the same challenges can be seen in the exclusion of these other minority groups in the design process. Therefore, the learnings from studying gender can be applied to the study of other minorities.

Digitalization can be both a cause and a solution to the increasing economic and social inequalities both within countries and on a global scale (Deganis et al. 2021, 1). Leaving people behind in the development and design of digital services causes increasing digital inequalities (Robinson et al. 2020; Criado Perez 2019; Deganis et al. 2021). But digitalization can also bring answers to many of the wicked problems of today's world. The key is to make sure that digitalization serves everyone, not only the few. The UN calls for a better coordinated multilateral and global effort for making sure that *"everyone should have an*

equal opportunity to become empowered through ICT". This includes the development of a methodology to measure digital inclusion. (Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation 2020, 8.)

This thesis argues that incorporating the diversity, equity and inclusion lenses in the design process can enable the development of inclusive digital public services, enabling digitalization of public services to serve even the most vulnerable and leave no one behind.

1.2   Goals and research questions

Digitalist Group has recognized the value of focusing on equality in their design work and the company is interested both in knowing how such topics are currently included in the design of digital public services internally and want to understand how equality could be included in the design process in the future. To help Digitalist Group develop an understanding of the current situation internally and provide tools for the future, this thesis focuses on understanding what diversity, equity and inclusion (DEI) mean in the design process of digital public services. Further, the thesis aims at identifying current challenges faced by designers and development professionals in including DEI in the process of creating digital public services.

The thesis has two objectives. First, to identify how DEI could be systematically incorporated in the design process of digital public services in the future and secondly, to develop a concrete design process and tools that designers can utilize as guiding tools when designing digital services for the public sector.

To reach the objectives, this thesis will aim at answering the following questions:

1) **How are diversity, equity and inclusion understood in relation to designing digital public services?**
2) **What type of challenges and needs are designers experiencing in designing inclusive digital public services?**
3) **How can digital public services be designed inclusively?**

1.3   Key concepts

Human centered design

The International Organization for Standardization (ISO) defines human centered design as follows: *"Human-centred design is an approach to interactive systems development that aims to make systems usable and useful by focusing on the users, their needs and requirements, and by applying human factors/ergonomics, and usability knowledge and techniques."* (ISO 9241-210:2019)

Service design

The concept of service design introduces design processes and methods from the physical design of products and art into the intangible design of services. The service design process is based on creativity and places user needs at the core of the development process. (Ojasalo, Moilanen & Ritalahti 2014, 71.) There are several definitions of service design, many names are used to describe similar approaches and a number of different service design process models are in use. The crowdsourced Miller definition of service design is widely accepted and describes the approach as follows:

- Service design helps organizations see their services from the customer perspective.
- It aims at creating seamless, high quality services by taking into account the needs of both the client and the business.
- It is grounded in design thinking and aims at combining creativity and human centricity in the design of new services.
- It utilizes methods that draw on the collaboration between the customers and the service design teams.
- It helps organizations truly and fully understand their own services and therefore helps them make all encompassing and meaningful improvements. (Miller 2018, 20.)

Digitalization and digital transformation

Digitalization is a megatrend that has been impacting the way our societies work over the past decades. Today the internet is all around us, the use of artificial intelligence (AI), social media, robotics and other new technologies define how we interact with services, products and all other parts of our lives.

Digitalization has several definitions, depending on who is asked. Ritter and Pedersen (2020, 182) define digitalization as simply as the application of digital technologies and the impact on society that the use of digitized data has. Some base their definitions of digitalization on

the use of digital technologies in communication and social life, whereas others tie the definition to business models and operations (Bloomberg 2018).

Digital transformation on the other hand entails the far-reaching organizational change that is required in adopting a customer driven, digital organization. Digital transformation cannot be undertaken in individual projects,but requires an overhaul of the entire organizational operations and functions. (Bloomberg 2018.) Therefore digital transformation is characterized as organizational change that leaves the organizations able to adapt to changing digital environments in an agile way. Digitalization is therefore not something that happens overnight. The Finnish Ministry of Finance describes digitalization as a process starting from analog labor and progressing through a digitization of forms to finally where the whole mode of operation changes into human centered service delivery (Parviainen, Kääriäinen, Honkatukia & Federley 2017, 14).

Kotarba (2018, 124) emphasizes the importance of realizing that mass trends, such as digitalization can have both beneficial and non-beneficial outcomes. Businesses such as Kodak and Blockbuster have gone under as they failed to adapt to the changing environment fast enough (Binns, Harreld, O'Reilly & Tushman 2014, 21). At the same time, countless new business opportunities have also formed as a result of digitalization (Caputo et al. 2021, 489).

Diversity, equity and inclusion

The Merriam Webster dictionary defines diversity as *"the condition of having or being composed of differing elements"* (Merriam Webster a 2021). When speaking about people, diversity then can be defined as the presence of differences among a set of people (Tan 2019, 31). These types of differences can include biological, cultural and socio-economic differences, such as gender, ethnicity, age, language, sexual orientation, belief systems, health status, educational background, employment status and others, **see figure 1**. It is important to note that a single person cannot be "diverse". As the term diversity only applies to a set of people, diversity is always determined in relation to other people (Bolger 2020).

Equity is defined by the World Health Organization (WHO) as *"absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality (e.g. sex, gender, ethnicity, disability, or sexual orientation)"* (WHO 2021). The concept of equity accepts that all people inherently have different starting points in life and that different measures are required to rectify the imbalance (Tan, 2019, 31). In practice this means that not everyone should be treated equally, but to achieve true equality of outcomes, specific measures should be put in place (equity) to address the needs of the disadvantaged groups (Gill, McNally & Berman 2018, 196). The words equality and equity are often used interchangeably, but there is a key difference in the terminology. Equity is a process where

resources are distributed so that the playing field is leveled between people, whereas equality means that everyone receives the same resources, see **figure 1.** Equity as an approach recognizes both the advantages and barriers that different groups of people experience, as well as the additional support that is needed for certain groups of people (often the most vulnerable) to get fair access and opportunity.

Inclusion is defined as *"the act or practice of including and accommodating people who have historically been excluded"* in the Merriam Webster dictionary (Merriam Webster b 2021). This means that inclusion is an intentional effort, not something that happens automatically, even in diverse environments. Creating an inclusive environment includes making people feel valued, appreciated and welcome (Bolger 2020). DEI educator Vernā Myers describes the relationship between diversity and inclusion as follows: *"diversity is being asked to the party. Inclusion is being asked to dance"* (Vernā Myers 2021), see **figure 1**.

Public sector services

Services organized and funded by the local or central government are considered public sector services. In Finland, the central government comprises state administration, social insurance, social security, universities and all services organized within these are public services. The local municipal government organizes public services such as the school system, early childhood education, health centers and hospitals (Tilastokeskus 2021).

Diversity

Presence of difference in identities and abilities

(eg. gender, ethnicity, culture, religion, ability, language, nationality, sexual orientation, age, socioeconomic status, education, employment)

Equity

Equal treatment does not always lead to equity, an approach is needed to reduce inequalities.

Inclusion

People with different identities & abilities (feel) valued, welcomed, leveraged

Figure 1: Diversity, equity and inclusion illustrated

1.4   Client: Digitalist Group

Digitalist Group is a digital design and customer experience company. They provide services ranging from customer experience, design, brand & strategy, to digital services, insight & research and innovation (Digitalist Group a 2021). The Digitalist approach aims at "future proofing" businesses by unifying design, technology and customer centricity. Digitalist Group was founded in 1994 and has since joined forces with Grow in 2018. The company provides services globally through five offices divided between North America and Europe. (Digitalist Group b 2021)

Digitalist Group provides a wide array of design services and also has wide research offering, in which aspects of diversity, equity and inclusion could potentially be incorporated in the future. Digitalist Group offers the following design and research services:

- o   Service Design
- o   UX/UI Design
- o   Design systems
- o   Product and packaging design
- o   Customer research
- o   Future scenarios & trends
- o   Market & Business analysis
- o   UX Research (Digitalist Group a 2021)

Digitalist works both within the private and public sectors, with the majority of projects coming from the private sector currently. However the share of public sector projects have been steadily increasing in the past years, making this research a timely and useful addition to the Digitalist offering. (Nirhamo interview 2021.)

1.5   Structure of the thesis

This thesis is structured around five chapters. The first chapter introduces the main topic of this thesis and the background to why this research is relevant. It presents the goals and research questions at the core of the research as well as the key concepts that the thesis builds on. Finally, the first chapter introduces the case company, Digitalist Group.

The second chapter builds the theoretical foundation of the research and development work by introducing topics such as digitalization of public services, the inclusive design of these services and how diversity, equity and inclusion are relevant in these processes. The third chapter introduces the methodology of the research and development process.

In the fourth chapter the results, the developed design process, tools and tasks are introduced and elaborated on. Finally, the fifth chapter concludes the thesis and discusses the implications of the work on both Digitalist Group and the design of digital services on a larger societal scale.

2 Digitalization challenges the public sector to pay increasing attention to designing inclusive digital services

In the past decades both society and the expectations toward public services from the public have changed tremendously, leading to vast changes in public service management. Public service logic is a theoretical framework that has developed from the management styles of the private sector and over time evolved to fit the needs of the public sector. Public service logic evolved from the public service-dominant logic framework, which in turn has its roots in the service dominant logic framework of Vargo and Lusch (Osborne 2018, 225; Vargo & Lusch 2004, 1). The shared features of these management logics are the service dominant logic and the focus on the user as a co-creator of value (Osborne 2018, 228). Public service logic is the prevailing theoretical public management framework, and it can be operationalized through for example human centered design, service design and all the linked design methods and tools.

In Finland climate change, demographic changes (population ageing, urbanization), rapid digitalization and economic globalization have led to the recently started public governance renewal (Julkisen hallinnon uudistamisen strategia 2020, 3). The renewal aims at responding to these global challenges by strengthening good governance and building sustainable wellbeing throughout the country. This includes a focus on diversity, equity and inclusion as well as increasing the participation of citizens in the creation of human centered services, making this research even more relevant for the public sector in the years to come. (Julkisen hallinnon uudistamisen strategia 2020, 5-7.)

2.1 Human centered design in public services

Human centered design, service design and design thinking as a whole are relatively new concepts within the public sector. We often relate service design with innovation and agile thinking, whereas the traditional view of government as a hierarchical and slowly evolving entity is quite far from that. Still, the value of placing the end user or beneficiary at the center of the design process has been recognized increasingly and in recent years governments on the local and national levels have adopted human centered design into their work. (Junginger 2017, 5-9.) Also high level, multilateral organizations such as the UN and OECD have began utilizing service design in their innovation activities and recommendations

for national governments (UNDP 2017; UNFPA Innovation Fund: Expanding the possible 2017; UNICEF 2021; Recommendation of the Council on Digital Government Strategies 2014, 2).

In the future successful organizations within both private and public sectors will have to nurture a more equal and collaborative relationship with their end users. In this future, the end user would be acknowledged as a co-producer of the service. (Polaine et al. 2013, 37; Recommendation of the Council on Digital Government Strategies 2014; Radnor, Osborne, Kinder & Mutton 303-304, 2014.) With the quickly changing service atmosphere in the private sector, citizens' expectations and wishes for public sector services are also changing (Ilmarinen & Koskela 2015, chap. 4.1; Markovitch & Willmott, 2014). Citizens may have higher demands for digital or more personalized services also in the public sector, which creates increasing demands on transforming public services. Centering the citizen in the development of public services is becoming increasingly important, as people tend to become less interested in being passive recipients of public services. (Griffiths & Kippin 2013, 5.)

The ISO standard (definition in chapter 1) grounds human centered design in the understanding of the users need and requirements in making technology usable and useful for people (ISO 9241-210:2019). Junginger's definition of human-centered design expands the understanding beyond the ISO standard to an approach that begins with the experiences of an individual and expands to include the social, political and environmental context the individual is immersed in. This definition of human-centered design therefore places the citizen at the center, while considering the wider environment, and is grounded in human rights and dignity. (Junginger 2017, 48.) Human centered design emerged into the public sector during the time when New Public Management was the dominating management direction within the public sector (Junginger & Sangiorgi 2011, 485). During this period, management pushed for private sector practices and approaches, such as human centered design, to be incorporated in the way the public sector managed its funds and services. Junginer and Sangiorgi (2011, 485) advocate for an even wider perspective of using design methods in the public sector. They want to move from only using design methods in service design to questioning the design of services overall and moving into designing public policy. They argue that for design to truly be transformational in the public sector, service design, public policy and public management have to come together. (Junginger & Sangiorgi 2011, 485.)

The participation of users or citizens/residents as contributors to public services is increasingly seen as beneficial for improving both the efficiency and quality of those services. (Vamstad 2012, 1184; Meijer 2012, 1163; Fledderus, Brandsen & Honingh 2015, 145-146) Additionally, Osborne (2018, 229) argues that placing the end user at the center of a public service development creates public value. The OECD recommendation echoes these and advocates that for user demands to become the drivers of public service transformation,

users need to be placed front and center in all phases of the service design process; from the planning all throughout the design, development, implementation and finally review processes. (Recommendation of the Council on Digital Government Strategies 2014, 55)

The mode of participation of people in the public service design and delivery process has differed over the years. Citizens have previously been seen as consumers of a service (Vidler & Clark 2005, 20) whereas they are now often seen as either co-producers or co-creators of the public service. The terms co-creation and co-production of public services differ slightly, but both entail the active involvement of citizens/residents in the design or implementation of public services (Voorberg, Bekkers, Tummers 2014, 3). In their 2014 structured literature review Voorberg et al. reviewed 122 studies related to co-creation/co-production of public services. The review indicated that co-creation/co-production had permeated a wide variety of different public service sectors. The vast majority of studies were related to health and education services, but other fields, such as media, waste disposal and library services were also represented. The review found three different levels of collaboration, where citizens were involved either as co-implementers, co-designers or initiators. (Voorberg et al. 2014, 7.) Interestingly, personal attributes such as education and socioeconomic status determined whether citizens participated in the co-creation/co-production activities, with for example participants with lower education and lower income levels being less likely to participate in the processes (Voorberg et al. 2014, 11). This is a crucial consideration in designing inclusive public services, as the process should involve a diverse set of participants, including people who are most vulnerable in order to produce public service that serve everyone, even the most vulnerable. How may we include also those who are not typically involved or included in the co-creation/co-production?

2.2 Digitalization of public services

Public services have also faced the different challenges and opportunities of digitalization. With the rapid changes in how people access services in the private sector, citizens have come to expect a certain standard of digital public services as well. As services are being compared to technological giants such as Google, citizens are expecting a similar level of speed, usability and ease of use also from public services (Ilmarinen & Koskela 2015, chap. 4.1; Markovitch & Willmott, 2014).

Governments are faced with the challenge of adapting to the changing digital realities, while also maintaining the existing values of good governance (A Vision for Public Services 2013, 5). OECD foresees that if governments fail to adapt to the new digital realities, they may not be able to provide high quality services, experience underperformance of spending, may face breaches in security and privacy and ultimately might lose trust of their citizens (Recommendation of the Council on Digital Government Strategies 2014, 3). To prevent this

and to provide guidance to governments, OECD passed the first international legal instrument on digital government in 2014, the Recommendation on Digital Government Strategies. The document defines how governments can transition from analog to digital government (**figure 2**) and provides specific recommendations on how to both design and implement digital government strategies and public services. It also provides support to all levels of government in strategically using technology for developing more innovative, open and participatory governments (Recommendation of the Council on Digital Government Strategies 2014, 3).

Figure 2: Digital government transition. Modified from OECD Recommendation of the Council on Digital Government Strategies (2014,3)

Digitalization of public sector services does not only mean a change in the technology utilized in the service provision, but is an all encompassing process requiring a shift in the organization of government wide systems, a change in how citizens are served and also a change in how the individual employees work (Febiri & Hub 2021, 2). Research and practice have shown that although the push for digitalization in the public sector is very much there, the field is extremely layered and a multitude of concepts exist to describe similar things (Lindgren & Jansson 2013, 163). Concepts such as e-service (Boyer, Hallowell & Roth 2002, 175), e-government service (Jansen, de Vries, & van Schaik 2010, 213; Venkatesh, Thong, Chan & Hu 2016, 87), public e-service (Karlsson, Holgersson, Söderström, & Hedström 2012, 158; Axelsson, Melin & Lindgren 2013, 10; Arduini & Zanfei 2014, 476) and digital public service (Lindgren, Madsen, Hofmann & Melin 2019, 428; Bertot, Estevez & Janowski 2016, 211) are examples of terms used simultaneously without clearly defining the differences or similarities. This thesis utilizes the term digital public services to describe all *"public services provided or mediated through internet-based technology"* (Lindgren et al. 2019, 428). In addition to a multitude of terms, several management approaches have been developed providing useful viewpoints for consideration in digitalizing public services. Open Governance

Management, Digital Era Governance (DEG), New Public Governance and paradigms such as we-Government and t-Government all provide different perspectives, while sharing the notion of increased participation of citizens in the development processes. (A Vision for Public Services 2013, 5.)

Digitalization of public services can be beneficial in several ways. Efficiency, financial savings, faster processing times, less calls and in person visits, but also customer satisfaction, wider availability of services and added transparency are several benefits that can be gained through the digital transformation of public services. Digitalization has also been showed to decrease unemployment and provide financial profits. (Parviainen et al. 2017, 19.) With the increasing costs of maintaining functioning and useful public services, digital transformation is providing a solution for more efficient and cost-effective service provision. As population sizes are increasing and populations in much of the world are growing older, there is a global need to organize public services for larger populations with less financial resources. This is where digitalization and digital transformation of public services can provide an answer. (Larsson & Teigland 2020, 3; Ylipulli & Luusua 2020, 4.) This also applies to the Finnish context, as the demographic transition means that the population is ageing and at the same time the country is experiencing rapid urbanization due to both people moving within the country and immigration into cities. This is placing growing financial pressure on the organization of public services, particularly in the metropolitan region. (Ylipulli & Luusua 2020, 4.)

Over the past decade, an increasing number of citizens in OECD member states have utilized digital public services. Between 2006 and 2016 the number of forms submitted through government websites increased threefold, from 12% to 36%. (Government at a Glance 2017, 202.) Although the development has been positive, it is crucial to pay particular attention to the inequalities that may arise from this development. OECD found that the use of digital public services varied between different population groups. Throughout member states the usage of online forms was higher among citizens with high income and higher education than citizens with low income and lower education. Similarly older people were only half as likely to have submitted forms to authorities online. OECD indicates that these discrepancies may stem from either varying needs or from lower socioeconomic status leading to lower digital skills. (Government at a Glance 2017, 202.) Disaggregated data is not available for other demographics, so it is impossible to know whether language background, health status, ethnicity or gender identity would impact the use of these services similarly. In 2020 the UN called on Member States to focus efforts on collecting disaggregated data of different population groups on the use of digital services. (Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation 2020, 8.) It is crucial for governments to recognize these differences in order to tailor future digital

public services to the needs of their citizens and avoid excluding certain, usually most vulnerable groups from the services.

Digitalization has also changed both the expectations people have of services and the way they interact with these services. In general people now have easy access to the internet and according to Larsson and Teigland (2020, 1) "availability" and "individualization" are becoming important customer demands for services they are using. These changing demands also apply to digital public services. Additionally, the increased use of social media has already altered the way citizens communicate with government structures, politicians or other authorities. Social media has become a new avenue for dialogue between authorities and citizens. (Greve 2015, 54.)

In Finland digitalization has been prioritized at the highest level, both through the ongoing public governance renewal (Julkisen hallinnon uudistamisen strategia 2020, 8-9) and through incorporating digitalization as an objective in the ongoing Government Programme for 2020-2023. By elevating digitalization to the highest level in Government planning, Finland aims at increasing the digitalization capacity in the public sector and to build new collaboration between the public and private sectors. (Valtionkonttori 2020.) As a country, Finland has succeeded extremely well in eGovernment and the provision of digital public services, also when comparing to the EU and global levels. (Digital Economy and Society Index 2016 Country Profile Finland 2016, 1; Digital Economy and Society Index 2019 Country Report Finland 2019, 3; Digital Economy and Society Index (DESI) 2020 Finland 2020, 3; UN E-Government Survey 2012: E-Government for the People 2012, 126; UN E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development 2020, 51) The annual Digital Economy and Society Index (DESI) has indicated Finland as a leader in digital development through ranking Finland in the top 5 every year since 2015 (Digital Economy and Society Index 2016 Country Profile Finland 2016, 1; Digital Economy and Society Index 2019 Country Report Finland 2019, 3; Digital Economy and Society Index (DESI) 2020 Finland 2020, 3). The DESI index includes 28 EU Member States and in the past two years (2020 and 2019) Finland held first place on the ranking. Similarly, the United Nations conducts an eGovernment survey for all its 193 Member States biannually. On this ranking, Finland has been among the top 10 countries since 2012 and in 2020 Finland placed fourth out of 193 countries. (UN E-Government Survey 2012: E-Government for the People 2012, 126; UN E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development 2020, 51.)

2.3   In Finland public services are for everyone

Public services are organized in a multitude of ways around the world. In some countries public services are not prioritized as highly and in many countries around the world the government struggles to even provide its citizens with minimal public services. In the Nordic welfare states citizens enjoy universal access to a number of public services, such as education, health services, social services and social protection services. (Digital Government Strategies for Transforming Public Services in the Welfare Areas 2016, 20.)

The Finnish welfare state provides basic public services for its citizens and the provision of public services is strongly grounded in the law. The Constitution of Finland (731/1999) not only mandates the government to provide its citizens a wide range of public services, but also states that all people are equal before the law. In addition to the constitution, other laws such as the Nondiscrimination Act (1325/2014), Act on Equality between Women and Men (609/1986) and other sector specific laws function as guiding frameworks for the equal and just treatment of citizens and people residing in Finland. The Nondiscrimination Act (1325/2014) states that people cannot be discriminated against based on *"age, origin, nationality, language, religion, belief, opinion, political activity, trade union activity, family relationships, state of health, disability, sexual orientation or other personal characteristics"*. In 2019 Finland also passed the Act on the Provision of Digital Services (306/2019), which aims at promoting the availability, quality, information security and accessibility of digital services and by doing so, improving everyone's equal access to digital services.

With several laws guiding equality in public services, including in digital services, the basis exists for digital public services that take into account diversity, equity and inclusion. Digital public services are supposed to serve everyone, including the most vulnerable in society. For this to become reality, specific measures need to be in place to make sure that everyone has equitable access to these services. This could entail developing the services in human centered ways that take into account diversity, equity and inclusion, providing training in the use of the services or a combination of these. This thesis focuses on the design of digital public services and aims at providing recommendations for human centered approaches to including people, that are currently often forgotten, in the design process.

With the increased use of ICT and digital services globally, new forms of exclusion have emerged, the digital divide is one of them. As public services are supposed to be accessed by citizens equally, the digital divide needs to be considered when organizing public services in a digital way. As discussed in the background chapter, much like other concepts related to digitalization, the digital divide also has a number of definitions. Some define the digital divide as a purely dichotomous access question; the people who have access to the

technology/the internet versus the people who do not have access to technology/internet. (Compaine 2001, xi.) Others define the digital divide as a multilayered issue, where access plays a part, but other issues such as socioeconomic status, gender, race/ethnicity, where people live and what their level of education is play equally important parts (Servon 2002, 1; Bimber 2000, 870). Even researchers advocating for the multidimensional model of the digital divide are not in agreement of what the different dimensions impacting the digital divide are (Helbig, Gil-García & Ferro 2009, 91). It is clear however that some type of digital divide can be seen between developing nations and industrialized nations, but also within countries. Particularly in countries with large socioeconomic differences and high levels of inequality, the digital divide provides an additional level of inequality. The digital divide has been explored on both population levels and individual levels. (Helbig et al. 2009, 90.) When considering a multidimensional approach to the digital divide, focused on the individuals' access, use and abilities, it is necessary to keep in mind that people's choices and ways of interacting with technology are impacted by their individual contexts and realities (race/ethnicity, age, gender and other factors) (Helbig et al. 2009, 92).

The digital divide has been recognized at the highest level and the OECD recommendation for the development of digital government strategies reads as follows: *"taking steps to address existing "digital divides" (i.e. the fact that societies can be divided into people who do and people who do not have access to – and the capability to use – digital technologies) and avoid the emergence of new forms of "digital exclusion" (i.e. not being able to take advantage of digital services and opportunities)"* (Recommendation of the Council on Digital Government Strategies 2014, 6). Similarly in 2020 the UN called on Member States to both collect disaggregated data that reflects the realities of different population groups and develop a methodology to measure digital inclusion or lack thereof to narrow the digital divide (Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation 2020, 8).

Based on the national legislation and the OECD and UN recommendations, this thesis is grounded in the rights of all to access public services, including digital public services and the values of nondiscrimination, equality and providing equitable access to digital public services. For these to materialize, it is crucial to recognize the digital divide and the fact that everyone has an individual set of attributes and intersecting factors that may affect their usage of digital public services. This is reflected in the research questions and aims of the thesis. Taking all this into consideration requires holistic approaches, recognizing these intersecting factors (socioeconomic status, gender, race/ethnicity, income, education, employment, and others) already in the design process of digital public services. The concepts of inclusive design, universal design and design for all can provide insight and tools for this purpose.

2.4   Design for all, universal design and inclusive design

The notion of designing inclusively is not a new one. The initial considerations of inclusive design related to accessibility. Accessibility of technology and society have become political focus areas on the highest levels and several governments and multilateral organizations have accessibility and nondiscrimination laws or policies in place. (Persson, Åhman, Yngling, Gulliksen 2014, 506.) One of the first pushes toward accessibility happened after the Vietnam war, when building barrier-free environments for war veterans in the USA became increasingly important (Persson et al. 2014, 505). In the 1970s, Victor Papanek, who is seen as a pioneer of inclusive design, argued that design was a political tool and should be in the hands of the people, with the community co-designing products and services (Clarke 2019). In recent years the concepts of inclusive design, design for all and universal design have emerged (Heylighen & Bianchin 2013, 93). These three concepts are seen both as interchangeable terms, simply having emerged in different parts of the world (Heylighen & Bianchin 2013, 93; Clarkson & Coleman 2015, 235) and others see them as clearly separate concepts (Holmes & Maeda 2018, 56; Inclusive Design Research Centre 2021).

"Designing for inclusion starts with recognizing exclusion" (Holmes & Maeda 2018, 1). In her book Mismatch: how inclusion shapes design, Holmes describes how the interactions between the user and the experienced environment can be recognized and addressed through inclusive design (Holmes & Maeda 2018, 10). Several definitions exist for design for all, universal design and inclusive design. While having different histories and definitions, they all aim at producing more accessible and inclusive outcomes, be it products or services. In fact, accessibility differs from the other concepts as it is an attribute or quality while the other concepts are considered design approaches or methods. (Holmes & Maeda 2018, 55; Persson et al. 2015, 505.) Accessibility is therefore an important cornerstone of designing inclusively.

It is crucial for the design community to realize and accept the fact that design can either enable or disable the participation of people (Clarkson & Coleman 2015, 236; Holmes & Maeda 2018, 2). Holmes calls this the mismatch of design, the barriers that stop us from interacting with our surroundings. The mismatches occur when our environment is designed in ways that stop us from participating, in effect the mismatches are what cause exclusion. (Holmes & Maeda 2018, 2.)

According to Persson et al. (2015, 508) the term universal design was first used by Mace, an architect and product designer. Therefore it is unsurprising that the concept of universal design has been widely used within the design of the built environment, within city planning and ergonomics. Moreover, the term universal design is more commonly used in the United States (Burzagli, Emiliani & Gabbanini 2009, 986; Heylighen & Bianchin 2013, 93; Clarkson & Coleman 2015, 235). This direction of design has focused on building environments and

products, which people with physical disabilities can have easier access to. Mace defines universal design as *"designing all products, buildings and exterior spaces to be usable by all people to the greatest extent possible"* (Mace, Hardie & Place 1996, 2). He also argues that a solution that removes a physical barrier for one person actually can add a physical barrier for another person. Universal design therefore moves beyond removing barriers and is a much more complex approach. Designing universally, Mace argues does not only make sense socially, but also economically. (Mace et al. 1996, 10.) Designers need to take into account that disability is not something that one is necessarily born with, but disabilities can occur throughout the lifespan (Mace et al. 1996, 6). Similarly, if disability is viewed as a concept of mismatch between the environment and the individual, all of us will go through moments in life, when our abilities are mismatched with the built environment (Holmes & Maeda 2018, 2). Several countries have laws in place to guide the development of buildings and physical spaces. In Finland the Government Decree on Accessibility of building (241/2017) outlines the criteria for building accessible physical spaces. Mace however argues that designers in the future will have to make a choice between limiting their designs to the minimum accessibility standards mandated by law and widening their scope to truly design universally (Mace, Hardie & Place 1996, 2). Environments designed using universal design approaches do not only benefit people with disabilities, they benefit everyone. An example is accessible entryways to buildings, which are needed by only 10% of adults, but makes life easier for everyone entering the building. (Mace et al. 1996, 11.)

According to Persson et al. (2015, 507), design for all is the most commonly used concept as compared to the others discussed in this section. As for the other concepts, several slightly differing definitions exist for design for all. The European Institute for Design and Disability (EIDD) was founded in 1993 and has now grown into the EIDD – Design for all Europe with 44 members in 18 countries, 14 in Europe and 4 outside Europe. (DfAEurope 2021) In 2004 EIDD decided on a common definition for design for all in the Stockholm Declaration, which defines design for all as follows: *"Design for All is design for human diversity, social inclusion and equality."* The Declaration also states certain cornerstones of designing for all. We must accept that everything around us, from the environment to services, culture and more is made and designed by people and people must therefore take responsibility to place the principle of inclusion at the center of design. Further, the end user of the product or service should always be involved in all stages of the design process. (DfAEurope 2004.) The design for all approach aims at designing for human complexity and diversity, but does not imply that one design needs to accommodate everyone. Rather it encourages providing a user-centered approach that could involve some type of adaptation to allow for flexibility based on the needs of the diverse group of end users. (Stephanidis 2001, 7.)

Inclusive design as a term, on the other hand is mostly used in the United Kingdom (Persson et al. 2015, 509). The concept of inclusive design emerged with the increased use of technology

in the 1970s and 1980s. Microsoft prioritizes inclusive design and defines it as follows: *"A methodology that enables and draws on the full range of human diversity. Most importantly this means including and learning from people with a range of perspectives."* (Holmes & Maeda 2018, 54) Holmes differentiates between universal design and inclusive design in two ways. She argues that universal design is more focused on the outcome while inclusive design focuses on the process of how to get to the outcome. Further Holmes (2018, 56) echoes the Inclusive Design Research Centre (2021) definition of universal design producing a one-size-fits-all outcome, while inclusive design produces a one-size-fits-one outcome. In 2015, the University of Cambridge published a case for inclusive design, based on over a decade of experience. The case has reportedly convinced major multinational enterprises to adopt inclusive design in their work. It defines inclusive design as having to both understand and have the diversity of one's customers inform the entire design and development process to be able to respond to the needs of a larger part of the population. (Waller, Bradley, Hosking & Clarkson 2015, 297.)

A number of other terms and concepts also describe similar approaches to design as design for all, universal design and inclusive design. For the purpose of this thesis, the name of the term is less important and the thesis will use the term designing inclusively hereafter. Much of the research on designing inclusively is focused on accessibility and therefore not fully accounting for the diversity of peoples' lived realities when it comes to social determinants such as culture, language, gender, sexuality, economic/educational/employment status among others. As the focus of this thesis is on diversity, equity and inclusion as described in the Finnish legislation on nondiscrimination and equality, the following sections will focus on these and on designing for social inclusion as a whole.

When considering these aspects of inclusion, gender sensitive design has been studied more widely than other aspects, such as socioeconomic status, ethnicity or race, sexual orientation, religion and age. It is possible to draw inferences on the other aspects of social inclusion from the example of gender (in)sensitive design. Criado Perez describes the world as being created to fit the needs of the white man. Although she describes the inequalities from the gender perspective, she acknowledges that the same applies for all outside of the white man's realities. Women as a whole are absent from the data and minority women are even less visible. (Criado Perez 2019, 14.) She argues that everyone outside the white man becomes invisible as the majority of existing data used for the design of both our environment, medicine, technology and all other aspects of our lived experience are designed based on data that is not disaggregated in any way. With the lack of disaggregation, it has been shown that the majority of the data represents a very narrow population. (Criado Perez 2019, 17-41.) Design examples from the field of technology include the size of smartphones, speech recognition software, facial recognition software and other biased AI algorithms. The size of most smartphones is designed to fit the male hand, which on average is larger than the

female hand. Speech recognition software has been shown to be biased in several ways. (Criado Perez 2019, 175-180.) Koenecke et al. found that the automated speech recognition software of five major technology giants, Amazon, Apple, Google, IBM, and Microsoft all had significant racial disparities when comparing the speech of Caucasian and African American voices. This means that they were more likely to misunderstand African American speech than Caucasian speech. (Koenecke et al. 2020, 7684.) Similarly the American Roentgen Ray Society found that voice recognition makes more mistakes with female voices than male voices (Voice Recognition Systems Seem to Make More Errors with Women's Dictation 2007).

2.5   Accessibility of digital services

Accessibility is a crucial aspect to consider when designing digital public services inclusively. As accessibility is currently mandated by law both on the EU and Finnish levels, it falls outside the scope of this research. Nevertheless, it is important to understand the meaning, implications and legislation to fully grasp how it relates to designing inclusive services.

Accessibility means that as many different people as possible can use digital services, such as websites and applications, as easily as possible. Accessibility therefore reflects how easy it is for everyone to use a digital service. In the past, a large portion of the world's population has been left behind by digital services due to various injuries, restrictions or differing abilities. Accessibility is an integral part of the principles of design for all, universal design and inclusive design, meaning that in accessible services even these people who have traditionally been left behind, are included as users and stakeholders in digital services. (Aluehallintovirasto a 2021.) In other words, taking into account accessibility in digital services contributes to equality. Accessible services bring digital services within reach of for example people with vision and hearing impairments, the elderly, people speaking other languages and, in the future, also those with learning difficulties. When a service follows accessibility criteria, aids such as a screen readers can be used to support in the use of the service.

The European Directive on the Accessibility Requirements for Products and Services (EU 2019/882) and the Web Content Accessibility Guidelines (WCAG) 2.1 (W3C 2018) regulate the implementation of accessibility in digital services in Finland. The European Directive on the Accessibility Requirements for Products and Services (EU 2019/882) is a directive that aims at minimizing the differences in accessibility among the EU Member States. The directive came into effect in 2019 and covers a multitude of digital products and services that were identified as both important for persons with disabilities and as having differing accessibility implementations across the EU Member States (European Commission 2021).

In Finland the Act on the Provision of Digital Services (306/2019) implements the European Accessibility Act. The Act has three central requirements:

- o Digital services and their contents should fulfill the WCAG 2.1 A- and AA-level criteria.
- o The accessibility of digital services and their contents must be assessed and the results, including possible shortcomings must be presented in a public accessibility report.
- o The digital services must include a channel for users to submit accessibility feedback, which must be answered within 14 days. (Aluehallintovirasto b 2021.)

The WCAG standards were first developed by the World Wide Web Consortium in 1999 and have since then been updated twice, in 2008 and 2018. The currently valid version is WCAG 2.1 and now WCAG 2.2 and WCAG 3.0 are under development. These are expected to include an even wider range of accessibility criteria than the previous versions. (W3Ca 2021.) WCAG 3.0 is distinctly different from the previous ones, with one central difference being the addition of new criteria focused on cognitive accessibility (W3Cb 2021).

The WCAG 2.1 criteria are distributed between four main principles: *perceivable, operable, understandable* and *robust*. Each of these principles include a number of success criteria, which can be tested by the development team during the development process of a digital service. These testable success criteria are divided into three levels: A, AA and AAA. (W3C 2018.) Out of these, the AAA level is the most ambitious and is not yet required under the Finnish Act on the Provision of Digital Services (306/2019).

2.6   The business case for diversity, equity and inclusion

When designing digital public services, or public services of any kind, it is absolutely important to include all aspects of society in the design process, in order to be able to provide services for all walks of society. The legal aspects of this and the rights of everyone to access services has already been discussed in **chapter 2.3** above.

For the public sector, the right of everyone to access services should be at the core of designing digital public services. As the private sector serves the public sector in designing digital public services, the demand often has to come from the public sector, and it may be difficult as a consultancy to define the requirements of DEI in the design process if the guidance has not come from the client. But ***including diversity, equity and inclusion in the way we work and function as organizations is not just the right thing to do, it's the smart thing to do***. Therefore, even if the request has not been made by the client, there are certain considerations the private sector can focus on in developing their own offering and ensuring the best quality for their clients.

Time after time research shows that more diverse teams lead to more innovative thinking and outcomes and are good for the bottom line in innovative companies (Thomas 2004, 1; Levine

2020; Lorenzo et al. 2017; Lorenzo, Voigt, Tsunaka, Krentz & Abouzahr 2018; Phillips 2014, 1). Having social and informational diversity in organizations brings together different opinions, lived experiences and knowledge, creating a more fruitful environment for innovation (Phillips 2014,2). Research by Dezsö and Ross (2012) showed that when a company's strategy emphasizes innovation, increased gender diversity in the management team leads to both a higher innovation intensity and a 42 million USD increase in company value. Likewise Richard, McMillan, Chadwick and Dwyer (2003, 121) saw similar results in relation to racial diversity. They found that banks with a focus on innovation benefitted from racial diversity, as their performance increased when the workforce was racially diverse. Not only does a diverse team increase innovation through bringing different perspectives together, it also increases market awareness and opens up entirely new market segments (Levine 2020). In 2013 Hewlett, Marshall and Sherbin (2013) found that when at least one team member shares the same minority traits as the end user, the whole team understands that specific end user better. For ethnic minorities they managed to show that the whole team understands the end user 152% better than a team without a person who shares the ethnicity with the end user. Already in the 1990s, through focusing on diversity within their workforce, IBM managed to harness diversity to increase their customer base and therefore create a *"virtuous circle of growth and progress"*. Through a taskforce approach IBM managed to substantially increase diversity in their workforce. This in turn opened up completely new market segments and unlocked a number of business opportunities, increasing revenue substantially. (Thomas 2004, 2.)

Profitability increases with diversity. Companies with higher-than-average total levels of diversity have on average 9% higher EBIT margins (Lorenzo & Reeves 2018) and companies with diverse management teams have 10% higher EBIT margins than companies with lower levels of diversity in their management teams (Levine 2020). Although several benefits exist in having a diverse workforce, diversity in itself cannot provide these advantages. Without an inclusive culture and working environment to enable the full participation of the whole workforce, diversity cannot produce the beneficial outcomes outlined here. (Lorenzo & Reeves 2018.)

The business case for diversity, equity and inclusion applies more widely than only for businesses. Kaplan argues that the lines between private, public and non-profit sectors are clouding. According to Kaplan all organizations *"create, deliver, and capture value"* and therefore they all have a business plan, even if they call it something else. All organizations, no matter in what sector they exist, need to be flexible and have a constantly evolving business plan for them to remain relevant. (Kaplan 2011.) In the same way as business models are relevant for all sectors, so is the business case for diversity, equity and inclusion. Therefore, though much of the research on the benefits of diversity and inclusion has been done within the private sector, the learnings can be extended to the public sector as well.

2.7   Synthesis of the theoretical framework

Technology is developing faster than ever and it has implications on everything around us, how we buy things, how we interact with services, how we participate in society. Government services are also getting increasingly digitalized and digital public services are becoming more prevalent around the world, including in Finland.

In Finland all people are equal in the face of the law and are entitled to public services. This also applies to digital public services. For services to be truly inclusive everyone must have equitable access to these services and intersectionality must be addressed through accounting for the full range of human diversity. Digitalization therefore challenges the public sector to respect and honor these values also in the design and development of digital services. The development of inclusive digital public services takes into account the principles of design for all/universal design/inclusive design as well as the WCAG accessibility criteria. Inclusive digital services are also developed in collaboration with the end users through human centered design, which allows for the end users to provide their perspectives, needs and challenges to inform the final design of a service. A truly inclusive design therefore sits in the crux of the principles of inclusive design, accessibility and human centered design (**figure 3**).
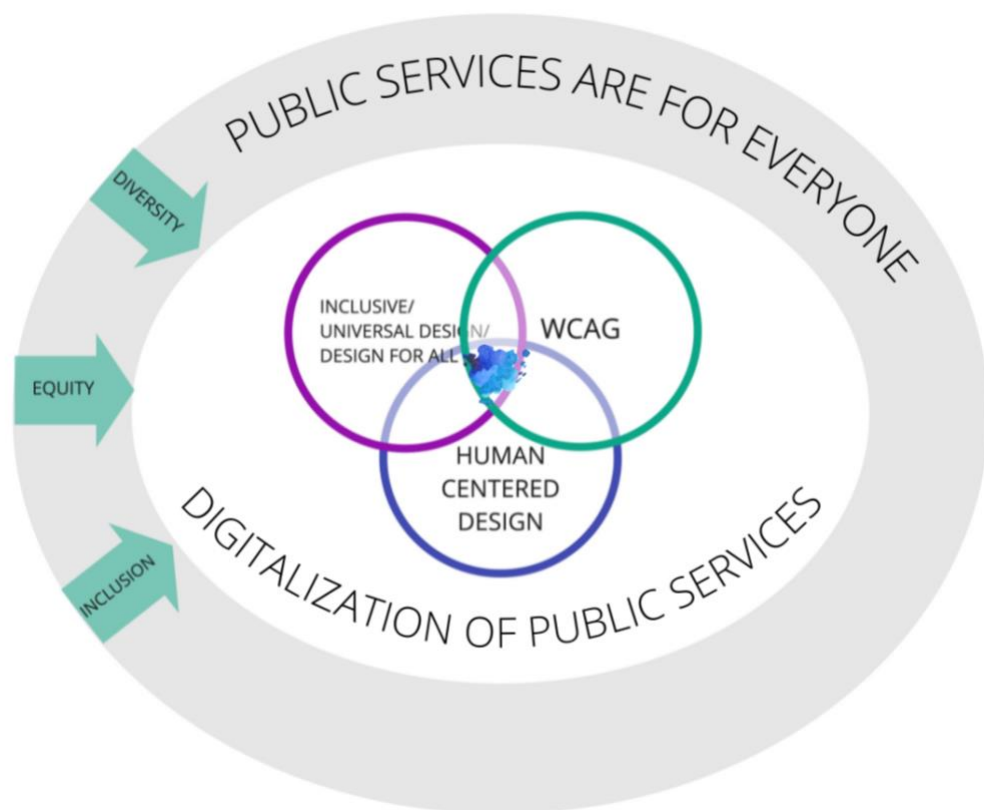

Figure 3: Synthesis of the theoretical framework - Designing inclusive digital public services in the Finnish context

3   Methodology

The methodology section of this thesis includes descriptions of the methods used, an overview of the development process and the data storage plan. The purpose of this thesis is to understand what diversity, equity and inclusion (DEI) mean in the design of digital public services. To reach his goal, the thesis aims at identifying how DEI could be incorporated in the design process systematically and at creating concrete tools for designers to utilize in the design process. For these purposes the thesis utilizes a case study methodology, combining quantitative and qualitative data. Although a case study, the subject of the thesis is related to the design of digital public services and this thesis therefore utilizes a number of design methods to reach its goals.

Chapter 3.1 describes the case study methodology, chapter 3.2 introduces the case study, chapter 3.3 gives an overview of the thesis process, chapters 3.4 and 3.5 introduce methods used in the data collection and analysis phases. Finally chapters 3.6 closes this section with the data storage plan.

3.1   Case study as a method

Case study research is a commonly used research method, particularly within social sciences. Case studies have an advantage over other research methods when investigating a phenomenon in their own environment and in their current state, which the researcher has no control over. (Ojasalo et al. 2014, 52-53; Yin 2018, 13-15.) The studied phenomenon or issue constitutes the "case" and it can be anything from a department within a company to the whole business or a customer segment, program or for example a process (Ojasalo et al. 2014, 37; Yin 2018, 15). Most commonly, case study research is conducted using one case, but it is also possible to utilize an approach with more than one case and compare the results of these (Ojasalo et al. 2014, 53).

Case study research aims at producing in depth and detailed information about the case. It is therefore characteristic of case studies that they are based on previous knowledge and rely heavily on several different sources for information. (Ojasalo et al. 2014, 52; Yin 2018, 15.) Case studies provide a holistic approach to understanding the case and several different methods are used to create the in depth knowledge of the case. Both quantitative and qualitative data, or a combination of the two, are appropriate for case study research. (Ojasalo et al. 2014, 55.) Case studies are particularly useful when the research questions start with the words "how" or "why" (Ojasalo et al. 2014, 53). They are also useful when the development process aims at producing recommendations for the future, but not necessarily fully developed outcomes (Ojasalo et al. 2014, 37).

Case study research is particularly beneficial when studying complex phenomena. As a response to the complexity, case studies provide a deep dive into the subject matter or phenomena, reviewed from many different angles and using several methods. This process is called triangulation. Triangulation of data not only produces more robust results, it also increases the validity of the case study, see **Figure 4**. (Yin 2018, 129.) There are four different types of triangulation that can be utilized in case study research; 1) data triangulation, 2) method triangulation, 3) theory triangulation and 4) investigator triangulation. (Laine, Bamberg & Jokinen 2007, 24; Yin 2018, 128.)

Figure 4: Data triangulation illustrated, modified from Yin (2018, 129)

Case study research has been described both as a process (Yin 2018, 1; Ojasalo 2014, 54) and a wider approach or research strategy (Laine et al. 2007, 9; Eriksson & Koistinen 2014, 4). Yin describes the case study process as a "linear but iterative process" with six steps; 1) plan, 2) design, 3) prepare, 4) collect, 5) analyze and 6) share (Yin 2018, 1). Ojasalo et al. (2014, 54) on the other hand describe it as a four-step process where the case study research begins by defining the preliminary research question, followed by familiarization with the phenomenon and refining the research question, empirical data collection and analysis and finally

providing recommendations for further development. The two case study process models are illustrated in **Figure 5**.
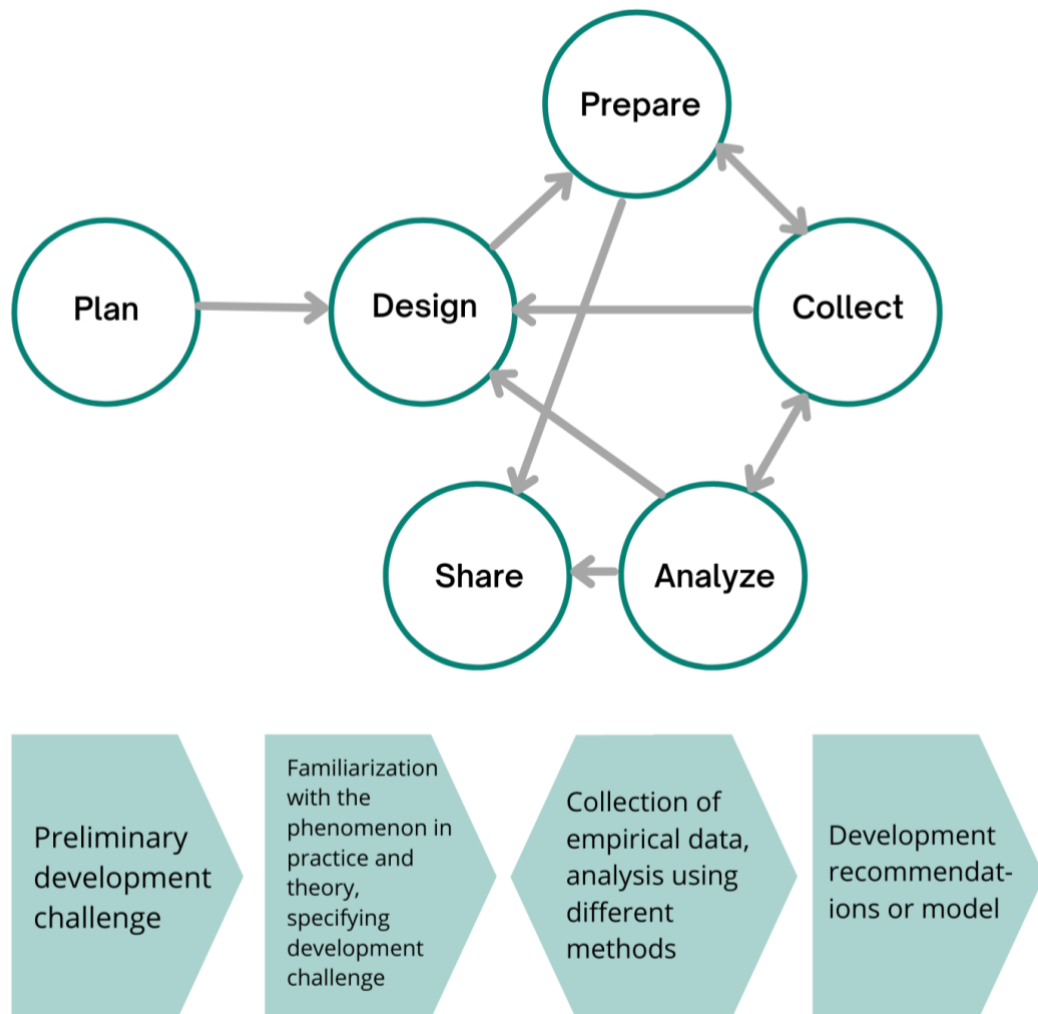
Figure 5: Yin and Ojasalo's case study processes. Modified from Yin (2018, 1) and Ojasalo (2014, 54)

Due to the iterative and complex nature of case study research Eriksson and Koistinen (2014, 22) describe the seven central steps in case study research rather than a process model. These central steps are:

- Formulating research questions
- Structuring research design
- Case definition and selection
- Defining which theoretical perspectives and concepts to use
- Defining the logic of the dialogue between the data and the research questions
- Deciding on the methods of analysis and interpretation of the data
- Selecting reporting method.

The seven steps described by Eriksson and Koistinen are also included in both the process models described by Ojasalo and Yin.

3.2 Introducing the case: Diversity, equity and inclusion in the design process of digital public services – Digitalist Group perspective

As this research aims at providing input on such complex phenomena as diversity, equity and inclusion and understanding "how" they can be incorporated in the design process of digital public services, the case study research approach was selected as the research process used in this thesis. Although this thesis follows the case study research methodology, it utilizes human centered design approaches to answer the research questions.

This thesis aims at understanding what diversity, equity and inclusion means in the design process of digital public services and how they can systematically be incorporated in the design process of these services. The selected approach was a single case study, allowing an in-depth investigation into the phenomena from the Digitalist Group perspective. The research included designers from Digitalist Group and their public sector clients as well as other public sector entities involved in designing digital public services.

Digital public services are becoming increasingly prevalent both globally and in Finland. The Finnish government has a program in place to promote digitalization and in the past years several public services have been made available digitally. (Valtionkonttori 2020.) This development has also been reflected in the increasing number of public sector clients at Digitalist Group (Nirhamo interview 2021).

With increasing levels of digitalization, the danger exists of both magnifying existing inequalities and creating new forms of inequalities in society through unnecessarily and

unwantedly excluding groups of people from digital services. Examples of increasing inequalities include the increasing digital divide, discriminating AI based algorithms and issues related to accessibility. This case study recognizes the risks of increased exclusion that comes with digitalization of public services and aims to address the phenomenon by both understanding what it would mean in practice to incorporate a DEI lens in the design process and provide some concrete suggestions that the design community can utilize in their own processes.

Digitalist Group provides design services for the public sector and in 2021 approximately half of the company's design portfolio was comprised of public sector clients. Digitalist Group's design relationships with public sector clients are generally longer lasting and continuous in nature whereas private sector relationships are usually project-like in nature and usually shorter in duration. In the past years, customer centered and design centered approaches have seemed to be on the rise with Digitalist Group's public sector clients. (Nirhamo interview 2021.) Digitalist Group recognizes the particular characteristics of public sector services where human centered design and inclusion should be at the center. The purpose of digital public services is to serve everyone in society and therefore the focus cannot be on any particular target groups within the population. It is therefore in the interests of Digitalist Group to develop both understanding and concrete tools for systematically including diversity, equity and inclusion in the design services provided to public sector clients. (Nirhamo interview 2021.)

3.3   Overview of the thesis process and timeline

The thesis work spanned over ten months, from January 2021 to November 2021. The thesis aims and objectives were determined based on preliminary discussions with Digitalist Group. The thesis loosely follows Yin's (2018, 1) case study process model. The process was designed to allow for triangulation of data, methods and perspectives to the data set.

The *plan* phase included preliminary discussions with Digitalist Group and a decision of what research approach to use for the thesis. The decision was made between a case study approach and a service design approach. As this thesis does not aim at producing a new service and as all criteria for case studies were filled, the case study approach using design methods was finally selected.

In the *design* phase the study was defined as a single case study and the case was defined as diversity, equity and inclusion in the design process of digital public services. In this phase a review of existing literature was conducted in order to tie the study outcomes into existing knowledge and theory. Based on the literature review and internal discussions, the

preliminary research questions were defined. Further, it was decided that the study would focus on both the perspectives of in-house public sector designers and development professionals as well as private sector designers who have experience with designing digital public sector services.

In the *prepare* phase the practical arrangements were agreed with Digitalist Group both prior to starting the research and development processes and at each step of the process. Due to the Covid-19 pandemic, all interviews and workshops were held remotely.

The *collect* phase was comprised of interviews, a survey, two workshops, a design probe and an overall review of existing online materials and tools, such as blogs, webinars and professional websites. As in Yin's process (2018, 1), the data collection for this thesis was an iterative process, which was ongoing throughout the research process. Data was collected early in the process when developing an understanding of the challenges, when defining how diversity, equity and inclusion are understood in the different phases of the design process in digital public services, during brainstorming and creating solutions and finally when validating the final results of this thesis.

To *analyze* the collected data, several visualizations where used. The initial analysis included clustering themes and developing personas, whereas the later stages analyzed workshop materials both in terms of the interactions and discussions as well as the workshop outcome materials.

Case study research typically results in suggestions for the future and do not necessarily develop concrete outcomes out of the suggestions (Ojasalo et al 2014, 37). This thesis however *developed* both an understanding of how diversity, equity and inclusion are understood in the design of digital public services and a concrete design process checklist and tools/tasks to assist designers in incorporating DEI in their work when designing digital public services.

The final stage of the case study was to *share* the thesis outcomes. Initially the outcomes were shared with Digitalist Group designers working with public sector clients through a design probe. After final edits the outcomes were shared with participants in the thesis process and the remaining staff at Digitalist Group.

The process is further described in **table 1**, which outlines the time, methods, participants, objectives and outcomes for each step in the thesis process.

Phase	Time	Method	Target group / participants	Objective	Outcome
Plan	January 2021	Preliminary discussions	Digitalist Group	Defining topic and research method	Initial topic on equality in the design process and selection of the case study methodology.
Design	January – March 2021	Research process planning	Digitalist Group	Clarifying the goals and objectives for the study and developing a concrete plan of action for the process.	Finalized topic on diversity, equity and inclusion in the design of digital public services. Defined research questions and target group for the study. Finalized plan for the collect phase.
	January – April 2021	Literature review	-	Understanding how digitalization and the diversity, equity and inclusion themes have been discussed previously.	Preliminary ideas for designing the survey and interview questions.
Collect	28 January 2021 - 16 February 2021	Survey	Designers and development professionals working on digital public services.	Determine existing challenges, needs and wants in relation to including diversity, equity and inclusion in designing digital public services.	Mapping external designers' and development professionals' perceptions of the topic and challenges in an affinity diagram and personas.
	8-12 February 2021	In depth interviews	Digitalist Group designers working on digital public services with public sector clients.	Determine existing challenges, needs and wants in relation to including diversity, equity and inclusion in designing digital public services.	Mapping internal designers' and development professionals' perceptions of the topic and challenges in affinity diagram and personas.
	26 April 2021	Workshop 1 – What does diversity, equity and inclusion	Designers and development professionals working on digital public	Develop a common understanding of the meaning of DEI in the design of digital services.	Mapping of how DEI could be incorporated in the different phases of the design process.

		(DEI) mean in digital public services?	services in the public sector.		
	29 April 2021	Workshop 2 – Ideation of concrete steps.	Designers and development professionals working on digital public services in the public sector.	Ideate how diversity, equity and inclusion can be included in the design process in the future.	List of ideas to be used in the prototyping phase.
Develo-pment	September – October 2021	Concepting	-	Analyzing results from workshops. Using results to prototype design process and tools/tasks	Initial design process and tools/tasks
Share	November 2021	Testing/valid ation: Design probe	Digitalist Group designers	Feedback on the design process and tools/tasks. Revisiting and making edits.	Final design process and tools/tasks
	November 2021	Final presentation and disseminatio n of results	Laurea graduate seminar, sending research to participants	Knowledge sharing	-

Table 1: Research process and timeline

3.4 Data collection

To allow for sufficient data triangulation, the data collection phase was an iterative process spanning from the early stages of the case study planning process throughout the final stages in the validation of the research outcomes. The sampling for all stages of the study was conducted as purposeful sampling. Purposeful sampling is a commonly used sampling method in qualitative research and it allows for identifying and choosing individuals for the research who have vast knowledge in the studied phenomenon. (Palinkas et al 2015, 2.) All participants in this study were either design or development professionals with experience designing digital public sector services.

Survey

The survey was organized as an online survey, which both facilitated the distribution and made it easier for the target population to answer the questions. The survey was accepting responses between 28 January 2021 and 16 February 2021. Although surveys are often labeled as a quantitative research approach, this survey design allowed for the vast majority of questions to be open ended, allowing for the collection of qualitative data.

The purpose of the survey was to both collect data on the challenges encountered by designers and development professionals in designing digital public services and to understand which aspects they find important in designing inclusive services.

The online survey was shared with designers and development professionals working on digital public services, either as in-house designers or as consultants working closely with the public sector. The survey was distributed directly to Digitalist Group public sector clients, on several designer specific Facebook groups, LinkedIn and through direct emails to designers and development professionals in the public sector. A total of 26 respondents answered the survey. All of the respondents belonged to the intended target groups and all the data could be utilized for the purposes of this thesis. The substance questions of the survey are available in appendix 1.

Semi-structured interviews

Semi-structured interviews include elements from both structured close-ended interviews and the very open-ended focus group discussions. They are conversational in nature and allow the interviewer to ask follow-up questions as they see fit based on the flow of the discussion. (Adams 2015, 492-494.)

Four semi-structured interviews were conducted in the collect phase, in the very beginning of the research process. The interviews were conducted in February 2021 with Digitalist Group designers working with public sector clients. The purpose of this phase was to understand what the challenges are that designers face in developing truly inclusive digital public services. The interviews also served as an entry point to understanding what groups of people the designers felt were most often excluded from the design process of digital public services.

The interviews were conducted virtually over Teams and each interview lasted 45-60 minutes in total. The interviews were transcribed into Excel. The interview questions are available in appendix 2.

Workshops

In the collect phase of the process two workshops sought to understand, through co-creation, what diversity, equity and inclusion mean in the design process of digital public services and to generate ideas to address previously identified challenges. Designers and development professionals with experience developing digital public services were invited to participate. The workshops were organized virtually using Teams as the communication channel and Miro as the platform for co-creation. The first workshop was organized on 26 April 2021 and the second workshop was organized 29 April 2021.

The aim of the first workshop was to understand what equality means in the design process of digital public services. The workshop had 7 participants. The workshop utilized individual ideation, the me-we-us method, small group discussion and group discussion with all participants together.

The first workshop began with Digitalist Group clients and public sector participants sharing how diversity, equity and inclusion are visible in their own work designing digital public services. Next, they listed their wishes for support and tools and identified which groups of people are most often excluded from the design process. The following phase focused on each phase of the design process (*planning, user research, analysis, design, testing*) and participants listed how DEI should or could be incorporated in each of these phases. Working one process phase at a time, participants utilized the me-we-us method, first quietly listing ideas independently followed by a pair discussion and finally all participants discussed their ideas together. In the final exercise participants produced a shared understanding of what DEI in fact means in the design process of digital public services.

The second workshop was an ideation workshop, which is a typical tool used in creative problem solving. Ideation workshops provide a structured and guided way for participants to develop solutions for identified challenges. A workshop generally includes a pre-phase, warm up phase, ideation phase and a selection phase. (Ojasalo et al 2014, 160.) The methods used in this workshop were affinity diagram, individual ideation and brainwriting, dot voting on ideas and rapid prototyping.

The aim of the second workshop was to ideate and develop solutions based on the challenges arising from the background research of the thesis. The participants read through and reviewed the already identified challenges and completed the data with challenges of their own. In a group discussion common themes and categories were identified from the challenges and an affinity diagram was produced. A dot voting exercise was performed to understand which two themes were considered the most important to focus on when aiming at developing inclusive digital services. The two themes receiving most votes were brought forward in the ideation step of the workshop. The ideation utilized the brainwriting method.

Brainwriting is a method in which workshop participants ideate in a group, completely without discussion but building on each other's ideas. The method often results in a number of quite far developed ideas. (Ojasalo et al 2014, 161) During the brainwriting session, the following vision for the future was written in the center of the canvas for everyone to see: "A Finland where digital public services serve everyone, even the most vulnerable". During the brainwriting session, participants selected which theme to focus on and began writing ideas on post-it notes. Participants then proceeded to further develop another participant's ideas on post-it notes and this process was repeated a total of three times. Finally the teams working on each theme voted on which idea to further develop in the rapid prototyping phase. In the rapid prototyping, teams further developed their favorite solution into a concrete and actionable concept prototype.

3.5   Validation

The outcomes of this research were validated with designers in workshops and through a design probe.

Probes are often used in design research and Mattelmäki (2006, 40) describes them as being based on *"user participation by means of self-documentation"*. Using probes in the research process allows the user to be an active participant in the design process. Probes are often used in situations where other in person methods are either not possible or not necessary. They generally consist of assignments or questions prepared by the designer to which the user provides answers in a predetermined manner. A probe can be anything from a diary to pictures or other tasks describing a participant's behavior, thoughts or wishes (Ojasalo et al 2014, 76).

The *Set the stage for DEI* exercise was validated by using it in workshops with designers. The *Diversity, equity and inclusion current state canvas* was first used in workshop 1 with designers, slightly adjusted and later reviewed through a design probe with Digitalist Group designers. The *Diversity, equity and inclusion design process* was validated through the same design probe with Digitalist Group designers. The outcomes validated through the probe were shared with four designers within Digitalist Group for feedback. The probe began by sharing instructions and the outcomes with the designers. Over the period of five consecutive days a specific question was asked about the outcomes to which they provided an answer. The probe was conducted over email for ease of use. This feedback was eventually used for iteration purposes to update and improve the final outcomes of this research.

3.6   Data analysis

Qualitative content analysis

The qualitative nature of the research justified the use of qualitative content analysis, specifically document analysis for the analysis of the data. Document analysis is a method that can be used with any written data, including transcribed interviews. Through document analysis one can find meaning in large amounts of written data. (Ojasalo et al 2014, 136.) In this research, affinity diagrams were used as the method for finding similarities and grouping the data into the emerging themes.

The affinity diagram is a tool often used in design processes to categorize and make sense of large amounts of data. The method allows drawing inferences and making connections between single data points and therefore develops deeper insight of the challenge. It allows moving from analysis to synthesis and provides an easy bridge between the challenge definition stage and solution ideation stage. (Dam & Siang 2020.)

This thesis utilized the affinity diagram approach to organize all the data on challenges, excluded population groups, currently used methods and ideas for the future collected through the four interviews, 26 survey responses and the two workshops. All transcribed materials were transferred to Miro to facilitate the visual grouping of themes emerging from the data. The final affinity diagrams were used to inform the development of personas, the final design process and tools.

In order to incorporate investigator triangulation in the process and to validate use of the approach, the data on challenges was reviewed and categorized into an affinity diagram by both the researcher and workshop participants. The researcher found six distinct themes emerging from the data, as depicted in **Figure 6**: lack of resources, access to minorities, lack of commitment to diversity, equity and inclusion, issues related to the characteristic of the design process, issues related to the characteristics of the public sector and lack of knowledge on DEI. When sorting the challenges and identifying themes, the workshop participants found seven themes from the data set, as depicted in **Figure 7 (**see Appendix 3 for larger image): customer centricity/service design lacking from the process, lack of resources, lack of toolkit, attitude/lack of empathy, difficulty including minorities, lack of understanding/knowledge and finally the narrow view of what DEI means. Several of the themes were overlapping, validating the previous research findings. Out of these seven themes, participants selected lack of toolkit and attitude/lack of empathy as the most important ones.
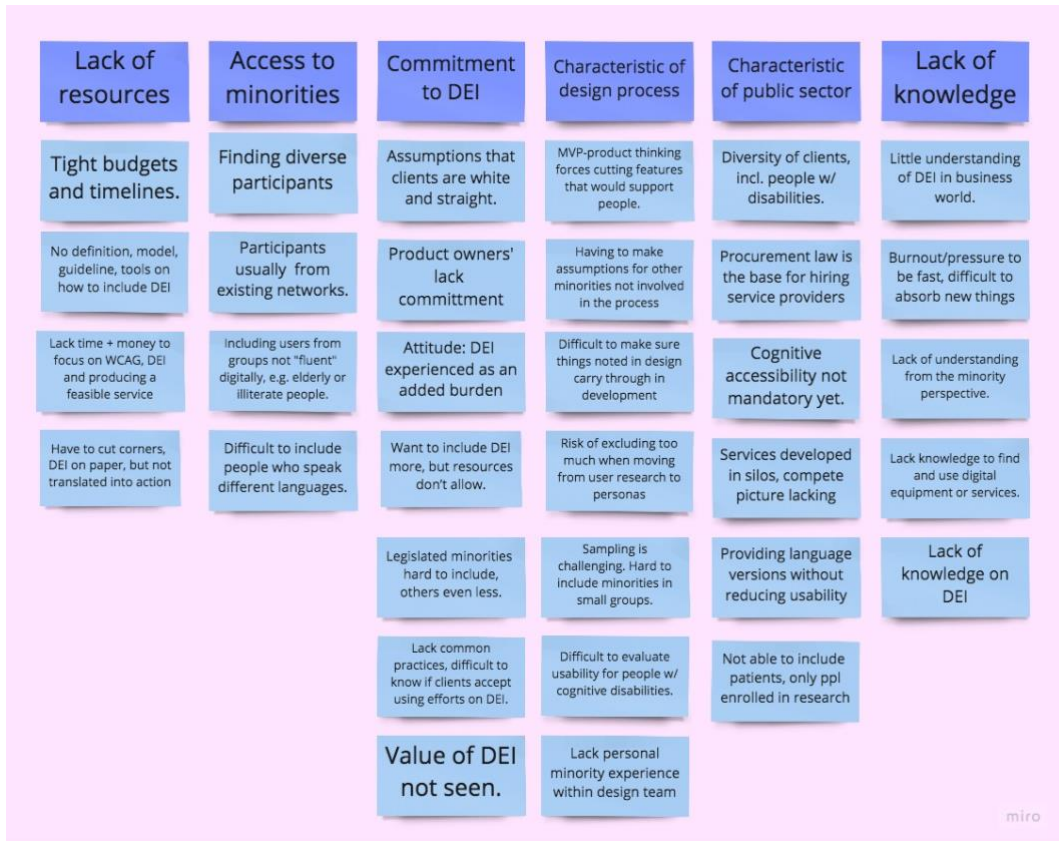
Figure 6: Affinity diagram based on researcher's analysis of data on challenges
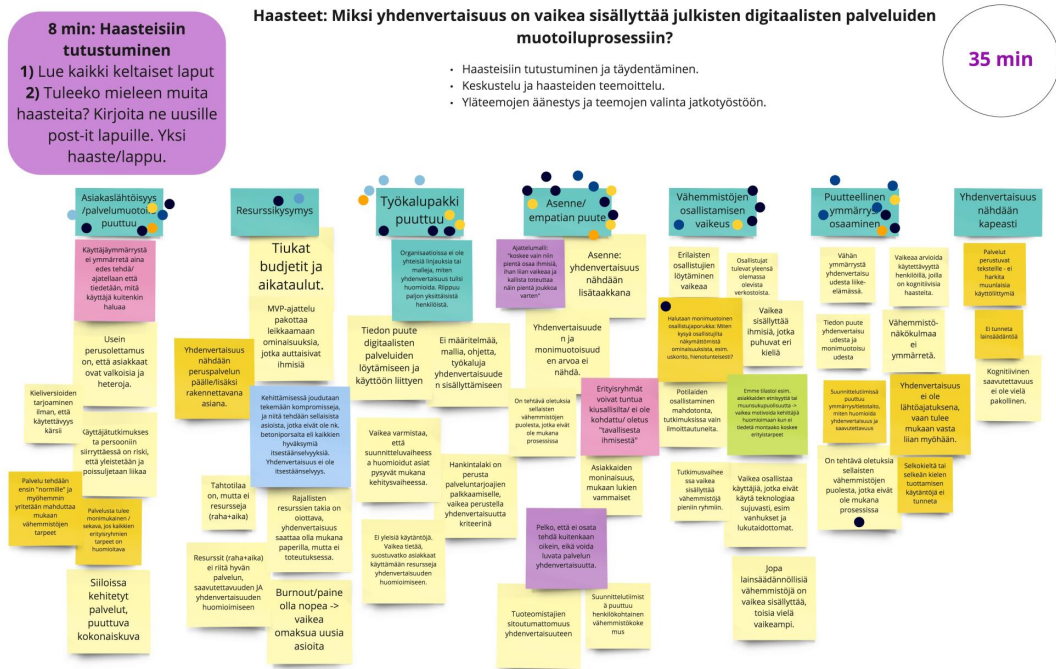
Figure 7: Affinity diagram based on workshop participants' analysis of data on challenges.

Personas

Personas are a useful tool in analyzing the collected information from the user research. They describe a fictive character that is based on real data. Essentially the persona brings the collected data to life in form of a fictitious person, based on real data. The persona often has a face, age and name and describes the likes, dislikes, motivations and goals of the person, among other things. Personas are a useful tool in service design, as they provide concrete insight into the perspectives of possible clients or end users. (Ojasalo et al 2014, 77.)

The initial user research gave rise to three personas, the in house designer from the public sector, the design consultant working with private sector clients and the designer with a minority background. Although overlapping with the two designer personas, the minority persona was created as the minority perspective within design arose as a crucial enabler for inclusive design from both the literature review (Hewlett et al. 2013) and the conducted research.

Designer with minority background

"Having personal minority experience helps me consider the perspective of other minorities too"

Challenges

- **Assumptions** that clients are white and straight.
- Having to make **assumptions** for other minorities not involved in the process, eliminating **bias**.

- **Attitude**/lack of understanding, difficulty **empathising**
- Product owners' (decision makers) **lack of committment**
- Not having people with **personal minority experience** on team.
- Finding diverse test groups and diverse participants in co-creation and prototyping phases.

- **MVP**-product thinking forces you to cut features that would help.
- Making sure things noted during design phases also **carry through** in development
- Tight **budgets** and timelines.

DEI aspects to consider

Not important   Very important

- Gender
- Age
- Gender identity
- Sexual orientation
- Nationality
- Ethnicity
- Language
- Health status
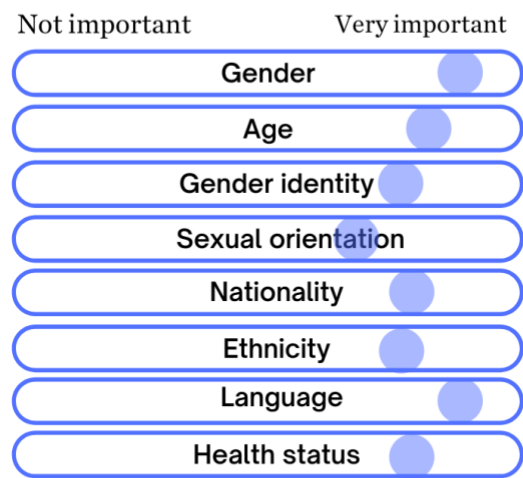
Wishes for the future

- More **discussion** on DEI
- **Resources** to fix things that are already done wrong in the existing system.
- **Templates** of what things to consider, like card deck or **frameworks**.
- Personal **minority experience**
- More **incentives** from government, better NGOs/orgs to help connect with minorities.

Figure 8: Persona for a designer with a minority background

In house designer, Public secotr

"We need time, money and training, but also attitude changes and commitment at the highest level to be able to work together and create inclusive digital services"

Challenges

- Diversity of users, incl. people w/ **disabilities**.
- **Hard to find** diverse participants, usually enrol ppl within our networks.
- Users from groups **not "fluent" digitally**, e.g. elderly or illiterate people.

- Lack **resources** (time + money) to account for accessibility AND design for all
- Providing **language versions** without reducing usability.

- No definition, **guideline** on how to include DEI in developing new services.
- Lack of **knowledge** on DEI
- **Attitude**, DEI experienced as an added **burden**.
- Lack of **minority experience** in design team & creating services for **own bubble**.

- **Procurement law** base for hiring service providers, hard to include diversity as a criteria.

DEI aspects to consider

Not important — Very important

- Gender
- Age
- Gender identity
- Sexual orientation
- Nationality
- Ethnicity
- Language
- Health status
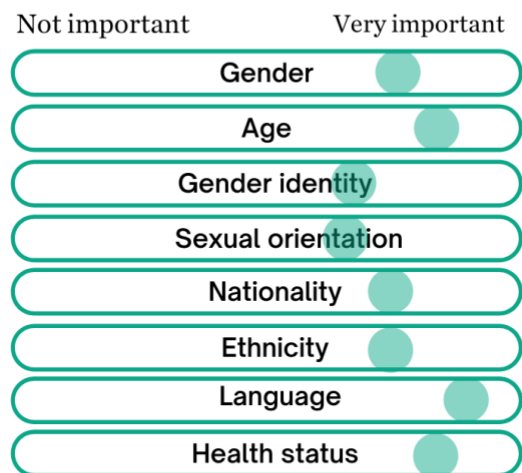
Wishes for the future

- Benchmarking, **collaboration** and learning.
- Personal **minority experience**, as-need **support**.
- Including **more diverse groups**, e.g. very old people, in beginning and in testing.
- **Trainings**, guidelines, principles, canvases, models, examples, better **attitudes**.
- **Experts** in a specific minority experience.
- More **data** on usability challenges.
- More **time** and **money**, **law**.
- DEI and user centered design part of organizations' **strategy & quality criteria.**

Figure 9: Persona for an in-house public sector designer

Private sector consultant

"In general the average Joe gets represented best in the process, the rest depends on how closely they're aligned with the average joe that their needs inform the design process."

Challenges

- Resources: Have to **cut corners,** but want to include DEI.
- **Lack of understanding** of the minority perspective.
- **Burnout** of staff, pressure, difficult to absorb new things.
- Public services often developed in **silos**, hard to get a full picture of what's been done.

- Risk of **excluding too much** when moving from user research to user journeys/personas.
- Start with biggest user group, might not get to others.
- **Sampling**: User groups small, hard to include minorities.
- Difficult to include different **language** groups.
- Even **legislated minorities** can be hard to include (eg Swedish)
- Difficult to evaluate usability for people with cognitive disabilities, then easy to **forget** them.

- Little **understanding** of DEI in business world.
- Difficult to know if **clients accept** efforts on DEI.
- **Cognitive accessibility** not mandatory yet.
- **Translations** are brief versions of original, usability not as good.

DEI aspects to consider

Not important — Very important

- Gender
- Age
- Gender identity
- Sexual orientation
- Nationality
- Ethnicity
- Language
- Health status
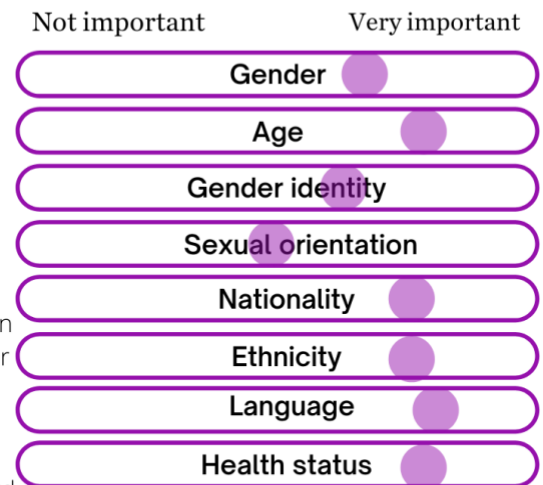
Wishes for the future

- **Training**. How do my decisions affect DEI? User community w/ diversity criteria.
- Baseline **design drivers**/values within team. "Are we **unnecessarily** excluding"?
- Broadening accessibility guidelines.
- **Legal**/state level guidance and enforcement. Building demand on client side, showing value. DEI visible in tendering process, eg score.
- Checklist overall demographics vs ppl included. Usability testing easier methods.
- **Social distance** between designer and user.
- Minorities represented on team, or consultation and networks.

Figure 10: Persona for a consultant designer working with public sector clients

3.7   Data usage and storage

All data collected in the thesis process was safely stored on the investigator's computer and on the programs used for recording the discussions (Teams and Miro). After the analysis of all the data and the finalization of the thesis, the data was destroyed.

4   Results

The results section includes the answers to the three research questions, so that each question is addressed in a subsection of this chapter. Chapter 4.1 describes how diversity, equity and inclusion in design are understood as a holistic societal approach, rather than design specific. Chapter 4.2 introduces the seven main challenges to including DEI in the design process of digital public services. It also identifies five main segments of the population in Finland that are currently not included in the design process. Finally, chapter 4.3 discusses both the societal and design process specific changes that are needed for digital public services to be designed inclusively.

4.1   Meaning of diversity, equity and inclusion in the design of digital public services

Finland has traditionally been quite a homogenous society and our services have developed in this environment without the need to particularly consider minorities. This tradition is still viable in Finnish society, validated by the research results indicating a need for including diversity, equity and inclusion in the design process in the future. In addition to the tradition of designing for a homogeneous population, unconscious bias is present in all of us and needs to be accounted for early on in the design process for the outcome to be truly inclusive.

It is clear that no common definition exists for what diversity, equity and inclusion mean in the design process of digital public services. Although no clear definition exists, there is widespread shared understanding that these topics are important and should be included more systematically in the design process in the future. When asking designers to come up with a shared understanding of what diversity, equity and inclusion means in digital public services, the wording was as follows: "Diversity, equity and inclusion in digital public services means taking people into account holistically as part of society". Interestingly the definition therefore does not make a distinction between digital services and physical services.

4.2   Challenges experienced by designers in designing inclusive digital public services

The research found that elderly people, people from language and cultural minorities, people with disabilities, people with lower socioeconomic status and people who are not digitally literate are often excluded from the design process. Additionally, the following seven themes emerged as challenges:

1. Customer centricity and service design lacking from the process
2. Lack of resources
3. Lack of understanding and knowledge
4. Attitude and lack of empathy
5. Lack of toolkit and guidelines
6. Practical difficulties including minorities
7. Narrow view of what DEI means.

Five segments of the population in Finland are often left outside the design process of digital public services

The way digital public services are designed currently, a number of population groups are excluded from the design process. By not including these groups in the design process, the final services do not necessarily cater to their specific needs. The research identified five main groups of people who are repeatedly excluded: elderly people, people belonging to language and cultural minorities, people with disabilities or other circumstances reducing their capability to use digital services, people with lower socioeconomic status and finally people who are not digitally literate.

Customer centricity and service design lacking from the process

Design methods are not always used in the development of digital public services and therefore user insight is often lacking. In these situations, assumptions are made about what the user wants and needs and often these assumptions are made through heteronormative and white normative lenses. Even in situations where user insight is collected, the risk exists that when moving from the research phase to personas, we lose much of the nuance through oversimplifying, generalizing and excluding too much. This in turn may lead to designing services for the "norm" and later trying to fit in some of the needs arising from minorities. One example of this is designing language versions so that the original user research and design are conducted in Finnish and the translations are created based on the finalized Finnish site. Furthermore, a large challenge lies in the siloed development of digital public services and the lack of a holistic picture of what already exists.

Lack of resources

There is a widespread lack of resources for digital development in the public sector both in terms or budgetary constraints and timelines. This challenge was raised both among employees in the public sector and external consultants working on public sector projects. The will to include diversity, equity and inclusion in the design process exists on both sides, but the resources are often the limiting factor. Issues related to DEI are therefore often seen as an add on onto the already developed services. With the limited resources, compromises are always required and often these compromises lead to cutting corners when it comes to DEI. So even if on paper DEI related issues are included, the resources available are not sufficient for designing a good service while considering both accessibility and DEI. Furthermore, the minimum viable product (MVP) thinking often leads to cutting functionalities that would in fact be helpful to many people. The human aspect and pressure to deliver also leads to designers not being able to learn, digest and adopt new approaches on designing inclusively.

Lack of understanding and knowledge

The lack of understanding of diversity, equity and inclusion and inclusive design is widespread. The design team often lacks both the personal minority experience and the understanding of the minority experience in general. This in turn leads to a lack of knowledge on how to include issues related to DEI and accessibility in the design process. Inclusive design is often an afterthought and not included as an approach early in the design process, leading to assumptions being made for minorities that were not included from the start. Moreover, there is a lack of knowledge of concrete methods that could help several people, such as methods to include people with cognitive challenges in usability testing and the lack of understanding of how to use easy-to-read language[1] in digital services.

Attitude/lack of empathy

The lack of understanding can lead to a lack of empathy and commitment to DEI as the value of inclusive design is not seen. Designing for diversity, equity and inclusion is at times seen as a burden. The design team is generally quite homogenous, lacking people with personal

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[1] The Finnish Centre for Easy Language provides guidelines and services on writing easy language. Easy language helps people with cognitive/neurobiological challenges, people who have reduced language abilities and people who belong to language minorities to understand and digest written language better. https://selkokeskus.fi/in-english/guidelines-and-instructions/

minority experience. This in turn sometimes gives rise to thinking patterns such as inclusive design only being relevant for a small amount of people. When the benefits are only seen for a small group of people, it often becomes too difficult and too expensive to focus efforts on designing inclusively for so few people. Simultaneously the lack of knowledge may lead to a fear of not knowing how to design inclusively properly enough and not being able to promise that the outcome will be truly inclusive. Not being used to working with special groups can also lead to uncertainty and feeling awkward, particularly since the client base is extremely diverse also including people with a range of disabilities.

Lack of toolkit and common guidelines

Public sector organizations do not have a common model, guidelines or tools on including diversity, equity and inclusion in their digital services, therefore much of the focus on inclusion is reliant on specific individuals' interest in the topic. Even if designers were to include DEI in their part of the development process of digital public services, ensuring the inclusion in the development process is challenging. The lack of common practices also makes it difficult for consulting companies to include these lenses in sales materials as it is difficult to know how the customer would value this. On the other hand, the Finnish procurement policies are very strict and do not necessarily allow adding new criteria, such as diversity, equity and inclusion in the process.

Practical difficulties in including minorities

Participants in the user research phase usually come from existing networks, which often lack diversity. A lot of times the research groups are relatively small, and it is particularly difficult to include several minorities in these small groups. Even when a design team has decided to include a diverse group of participants, they can be difficult to find. How for example can one ask participants about invisible qualities, e.g., religion in a tactful way? The lack of statistics on, for example, customers' ethnicity or gender minority leads to a difficulty in motivating developers to take these into account when it is not known how many people these special considerations would impact. Justifying additional resources for including people who speak different languages was also seen as a challenge. Even the legislated minorities (e.g. Swedish speakers in Finland) are difficult to include, others are even more challenging.

Narrow view of what DEI means

Not understanding the full diversity of people leads to a narrow understanding of what diversity, equity and inclusion truly could mean in the design of digital public services. The legislation related to equality is not widely known or interpreted to relate to the design of digital services. In Finland the Act on the Provision of Digital Services guides the regulation on

accessibility, but cognitive accessibility is not yet mandatory. As it is not yet mandatory, all services are based on textual content and other types of user interfaces are not even considered.

4.3   Designing digital public services inclusively

The research revealed two different levels of actions that are required for the development of truly inclusive digital public services; 1) systemic, society wide change and 2) design process specific changes. The society wide changes range from learning empathy in early childhood to legal and policy level changes within the public sector. The design process specific changes are introduced in this chapter and made more concrete through the tasks/tools and design process in chapter 4.4.

Systemic, societal change is required for DEI to be prioritized at the highest level

The research indicated that a society wide transformation is required for the prioritization of diversity, equity and inclusion to become systematic in designing digital public services. The below suggestions on what type of transformation is required and how it could be reached emerged throughout the research.

Empathy at the center of inclusive societies and services

Throughout the research, empathy emerged as a central force at the core of inclusive design.

"The holistic and empathetic understanding of people is easily forgotten behind the technology, even when we tell ourselves that's not the case" (Workshop participant, 2021)

Not only was empathy seen as something designers need to learn, but rather seen as something we all as a society should practice, already from childhood. Teaching diversity and its acceptance to children from an early age would lead to them taking it better into account at work as adults. We need additional training on empathy, empathetic intelligence, interaction skills and diversity, equity and inclusion in order to design a more empathetic and inclusive society.

Developing understanding of DEI issues in the public sector

Creating the demand for digital services that consider DEI requires developing the understanding of why these topics are so important. The public sector is lacking understanding related to diversity, equity and inclusion and trainings are required across the board. DEI trainings should be offered at the highest level, but also on every level below that, to ensure that the mindset is nurtured throughout the organizations. Trainings could be made mandatory and a part of every new recruit's onboarding process. More encounters should be

facilitated between authorities and citizens to increase understanding of the citizens' lived realities.

For DEI to be increasingly prioritized in the public sector, tangible information on the benefits is required. The terms in themselves are not well known, so simply using the terms diversity, equity and inclusion more systematically, particularly together with accessibility can help familiarize authorities, assisting in the future prioritization of the topics.

Increased collaboration within the public sector

In order to most efficiently utilize tax funds, the public sector should avoid working in silos and avoid recreating the wheel when it comes to developing approaches incorporating DEI in their work. The research indicated that there is a need for common guidance and guidelines for how public organizations should incorporate DEI in the design of digital public services. An open toolkit is needed where different public sector actors can share materials, tools and approaches and as the platform would be open, anyone could access the materials.

Commitment to and funding for DEI on a high level

High level commitment and earmarked funding for diversity, equity and inclusion would function as a needed catalyst for cultural change. The research indicated that there is a need for common strategic direction and requirements on including issues related to diversity, equity and inclusion as a cross cutting theme in all public organizations. The commitment has to come from the highest level, not only in form of speeches and encouragement but in the form of budget, additional design positions and resources to fix things that are already done wrong in the existing systems.

Diversity, equity and inclusion packaged together with accessibility in legal and reporting instruments

Incorporating diversity, equity and inclusion together with accessibility in the Act on Public Procurement and Concession Contracts (1397/2016), the Government's digital strategy and the Act on the Provision of Digital Services (306/2019) were seen as enablers to designing truly inclusive digital services. After passing the Act on the Provision of Digital Services enforcing the accessibility standards, at least the required accessibility minimum is now a part of digital design and development. Hence, if DEI could be packaged together with accessibility, at least a shared minimum standard would be included throughout digital public services and digital society as a whole. Legal design was seen as a viable method for this work.

Organizations' internal reporting instruments were also seen as crucial in including DEI in digital public services. If DEI was included in organizations' key performance indicators and

the reporting on DEI would be mandatory, with the results of the reporting being open to all, the topics would most likely be incorporated and prioritized on the organizational level.

Systemic, societal change is required for DEI to be prioritized at the highest level

Empathy at the center of inclusive societies and services
- We all as a society should practice empathy, already from childhood.
- Training on empathy, empathetic intelligence, interaction skills.

Developing understanding of DEI issues in the public sector
- The public sector needs trainings on DEI across the board, due to lack of knowledge on all levels.
- Encounters facilitated between authorities and citizens to increase understanding of the citizens' lived realities.

Increased collaboration
- Avoid working in silos and avoid recreating the wheel
- Common guidance on how public organizations should incorporate DEI in digital public services.
- An open toolkit is needed where public sector actors can share materials, tools and approaches.

Committment to and funding for DEI on a high level
- Earmarked funding for diversity, equity and inclusion as a needed catalyst for cultural change.
- Commitment from the highest level: budget, additional design positions and resources to fix things that are already done wrong in the existing systems.

DEI packaged together with accessibility in legal and reporting instruments
- Incorporating DEI together with accessibility in the Act on Public Procurement and Concession Contracts and in the Government's digital strategy.
- DEI in organizations' internal reporting instruments and KPIs.

Figure 11: The societal change enabling the full value of the DEI design process

Changes required for the design process to include diversity, equity and inclusion

The research identified a number of concrete changes that could be implemented in the design process to make the digital public services more inclusive. Several of the suggestions are simple and straight forward, whereas others require more extensive changes and resources. The identified changes are outlined in the below section and illustrated in the *Diversity, equity and inclusion design process* in chapter 4.4.

Service design process inherently inclusive, when done comprehensively enough

"Enough time must be allowed for service design processes to create a genuine opportunity to take real account of customers' situations at different stages of the process and to adjust the process to ensure different peoples' involvement". (Workshop participant, 2021)

The service design process - when it is at its best - was seen as inherently inclusive. Several of the commonly used design tools and methods were highlighted when mapping out the DEI design process, with the caveat that every tool and method needs to pay particular focus on DEI. For example personas are an excellent tool to illustrate the needs of minorities, but they also come with the risk of oversimplification and excluding the minority perspective. Similarly, all user research can be inclusive if it includes a sufficient representation of minorities. The service design process with its tools and methods can be truly inclusive if additional time and resources are allocated to ensure diversity, equity and inclusion. Further, minority participants and their perspectives arising in the user research stage should be included in the design, even when the number of minority participants is small in the sample.

Place greater emphasis on the planning and research phases

In the inclusive design process an even bigger emphasis is placed on the planning phase than usually as much preparation has to be done in terms of composition of the team, strategic recruitment of participants for user research, earmarking of funds for DEI, providing different ways to participate and even building new partnerships with NGOs and others.

Build capacity of designers

The research indicates a lack of knowledge on *how* to design digital public services that account for DEI, both within the public sector and among consultancies working on public sector projects. The need for trainings on both sides was vocalized throughout the research. For consultancies working with public sector clients training would be useful to help develop their offering and create demand on the client side. On the other hand, trainings on the public sector side would help decision makers prioritize DEI and help designers to focus on DEI and provide services that truly serve everyone equitably.

Include the minority perspective in the design team

During the planning phase it is crucial to review the composition of the design team to review whether it is possible to include a designer with minority experience in the team. If this is not a viable option, other possibilities would be to set up a feedback system with designers from minorities or utilize experts by experience to answer questions with a low threshold.

Earmark funds for inclusion

Consultancies collaborating on digital public services could make it visible to clients that a specific amount in the budget is dedicated to the purpose of ensuring diversity, equity and inclusion in the design process. On the other hand the public sector could prioritize DEI already in the tendering process, to indicate that they would value offers with a DEI focus.

Strategically recruit for user research

The research indicated that five segments of the population are often excluded from the design process. These are not necessarily omitted purposefully and therefore it is crucial to consider who might be accidentally excluded if attention is not paid. It is important to determine which groups of people will be most affected by the new service. The team should ask themselves "who are we accidentally excluding?". No groups of people should be accidentally excluded, but informed decisions are needed on the population segments that will not be included in the design process. The DEI current state canvas (**Figure 20**) can be used to support in this thinking. Collaboration with NGOs can both help source participants for co-creation and user research, but also help develop an understanding of the ways that would make it easiest for people belonging to minorities to participate meaningfully.

Make the participation of different groups as easy as possible

Translators, interpreters, utilizing in person methods in addition to virtual methods, accessible locations and virtual tools, are all examples of ways that participation can be made easier for a diverse group of users. It is important to allow the user to select the best and most convenient way for them to participate. Allowing more time for research with minority groups than one would generally allocate for research is crucial.

Make the participation of minorities meaningful

It is imperative to ensure that the data collected from minority participants is utilized, even if the sample was not representative. The research revealed the risk of oversimplification when moving from the user research phase to the analysis and visualization phase. In this phase minority voices may be lost if their perspective is seen as individual voices among the masses. Therefore, the minority voices should be included even when they are fewer than

ideal. One way to make sure that they are included throughout is to create minority personas in addition to other personas, for them to be visual reminders throughout the analysis and design phases. Make sure to use inclusive imagery in visualizations.

Validating, testing and *using* the information collected through the validation is important. Building in additional test rounds will help validate separate elements of the design. Collaborating with NGOs, minorities and experts by experience on the testing, and utilizing DEI experts and accessibility experts to conduct expert evaluations should be facilitated. For the participation to be truly meaningful, it is crucial to have earmarked funds and resources to reverse the direction of the project if the testing indicates a need.

4.4   Systematically incorporating diversity, equity and inclusion in the design process

The four concrete outcomes of the research and development process are outlined in this section. The first concrete outcome is the *Diversity, equity and inclusion design process*, which acts as a checklist on how to systematically include DEI in the design process. The three remaining outcomes consist of tasks/tools named *Set the stage for DEI, Define your social distance* and the *Diversity, equity and inclusion current state canvas*. The *Diversity, equity and inclusion design process* is presented in the following six figures (**Figure 12 – 17**).

In **Figure 12** all the stages of the design process have been outlined together with the different aspects of DEI to be considered throughout the entire design process. The aspects to consider throughout the whole process are as follows:

- **Gender**: More than two genders, remember while designing forms, UI with name or gender information.
- **Ethnicity**: Inclusive images, attention to AI and bias.
- **Language**: Use translators, use easy language
- **Ability**: WCAG 2.1., WCAG 3.0 is coming
- **Sexual orientation:** Use inclusive language, eg spouse/partner instead of husband/wife
- **Health status:** Dexterity, mobility
- **Socioeconomic status:** Digital divide, cost and access to services
- **Age:** 15 and 70 y/o use services differently, level of digital literacy

The following five figures (**Figures 13 – 17**) outline specific considerations related to DEI for each step of the design process.

HOW TO INCORPORATE DIVERSITY, EQUITY AND INCLUSION IN THE DESIGN PROCESS

Planning

Analysis

Testing

Research

Design

SOCIETAL CHANGE

SOCIETAL CHANGE

REMEMBER THROUGHOUT

Gender: More than two genders, Remember while designing forms, UI with name or gender information.

Ethnicity: Inclusive images, Attention to AI and bias.

Language: Use translators, Use easy language

Ability: WCAG 2.1., WCAG 3.0 is coming

Sexual orientation: Use inclusive language, eg spouse/partner instead of husband/wife

Health status: Dexterity, Mobility

Socioeconomic status: Digital divide, Cost and access to services

Age: 15 and 70 y/o use services differently, Level of digital literacy

Figure 12: Diversity, equity and inclusion design process

- Determine current state of DEI in project *(tool: DEI current state canvas)*
- Choose methods, taking into account DEI
- Review "social distance" between designer and user *(tool: wheel of social distance)*
- Shared understanding of DEI within the team *(tool: Set the stage for DEI)*
- Plan project to include DEI from the start: strategy, goals, indicators, funds
- Add minority perspective in design team, either internally or using experts by experience.
- Benchmark to find best practices and understand previous projects
- Minimum WCAG 2.1, aim for WCAG 3.0

Figure 13: Diversity, equity and inclusion design process - Planning phase

- Add additional time to understand user groups, methods based on this.
- Earmark funding for including minority groups in the research process.
- Map users and stakeholders to understand who you might accidentally exclude.
- Strategically recruit user research groups.
- Develop database / user community with diversity as a recruitment criteria.
- Accept a smaller sample size for minorities
- Use in person research methods, incl. observation to also understand context.
- Collaborate with NGOs
- Allow more time for research with minorities
- Use translation to be able to include other language groups.
- Use accessible locations and accessible virtual tools (eg excel vs Miro)

Figure 14: Diversity, equity and inclusion design process - Research phase

- Determine the impact and frequency of the problems identified.
- Make sure not to oversimplify when moving from research to analysis.
- Make personas of groups identified as possibly being excluded.
- Use inclusive imagery in visualizations.
- Validate observations with minority groups, collaborate with NGOs, experts by experience.
- Conduct analysis in multidisciplinary and diverse teams.
- Include answers from minorities, even when sample not representative.

Figure 15: Diversity, equity and inclusion design process - Analysis phase

- Inclusion in co-creation, take into account language, tools/methods, location etc.
- Do not exclude groups by accident.
- Include all identified stakeholders / groups that are relevant.
- Design in other languages in addition to Finnish.
- Use easy language and inclusive imagery.
- Design in small increments.
- Iterate and test - an extra check with minorities early.
- Validate content/visuals.
- Include diversity in the design and development teams.
- Ensure that inclusive design elements are not lost in development.

Figure 16: Diversity, equity and inclusion design process - Design phase

Testing

- Systematic testing with end users throughout
- Provide option to test either in person or virtually.
- Collaborate with NGOs to organize opportunities for minorities to participate.
- DEI experts conducting audit.
- Accessibility experts conducting audit.
- Assess the level of risk caused.
- Document and utilize results of testings.
- Include DEI focused testing as part of routine quality control.
- Put in place ways and resources to reverse the direction of the project if testing indicates a need.
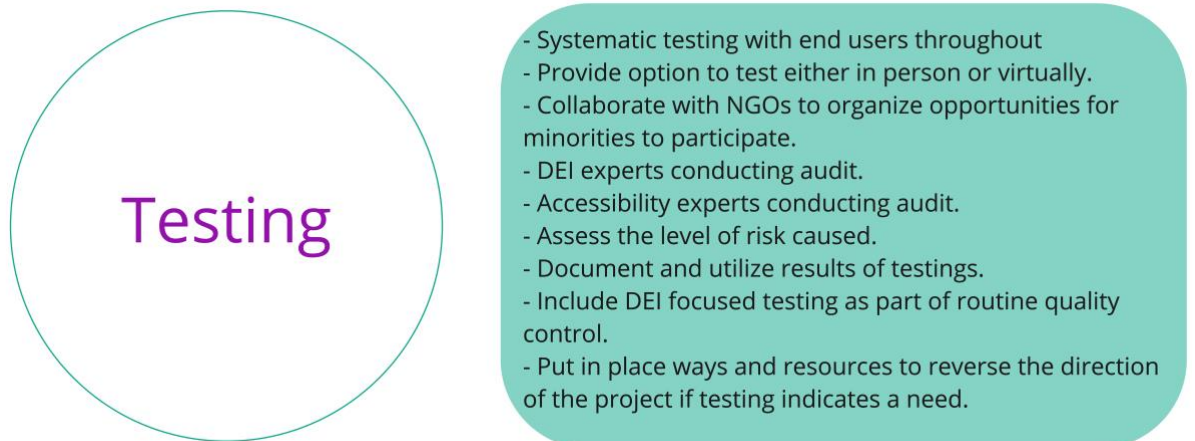
Figure 17: Diversity, equity and inclusion design process - Testing phase

Tasks and tools to support designers

The three tasks were developed to support the designer include aspects of diversity, equity and inclusion in the design process of digital public services. The tools/tasks help create shared understanding on DEI within the design team. They can be used throughout the design process, but are particularly created to support in the initial stages of the design process. These tasks are neither mutually exclusive or required to be used all together, the design team can therefore select which ones are most suitable for their needs.

Task: Define the social distance between you and the people you are designing for

How far are you socially from the people you are designing for? This task can be completed either within the team or with the client. If completed within the team, go through the wheel of social distance below (**Figure 18**) and plot yourself along the wheel. Review what groups are furthest away from yourself and compare these among the team members. What are the commonalities? What marginalized groups are not represented in the team whatsoever?

If the task is completed with the client, divide the task into two sections: a personal and a joint section. First, during the personal task plot yourselves against the wheel individually. Instead of sharing your results, think about the end users and plot them against the wheel together as a group. Consider the potential gaps together, without pressuring anyone to share their personal results and think about how these gaps could be bridged if at all.

Finally once the gaps have been identified, consider whether these should be considered in the design process and how in that case. If yes, pay additional attention to including these groups in the user research, design and testing phases.
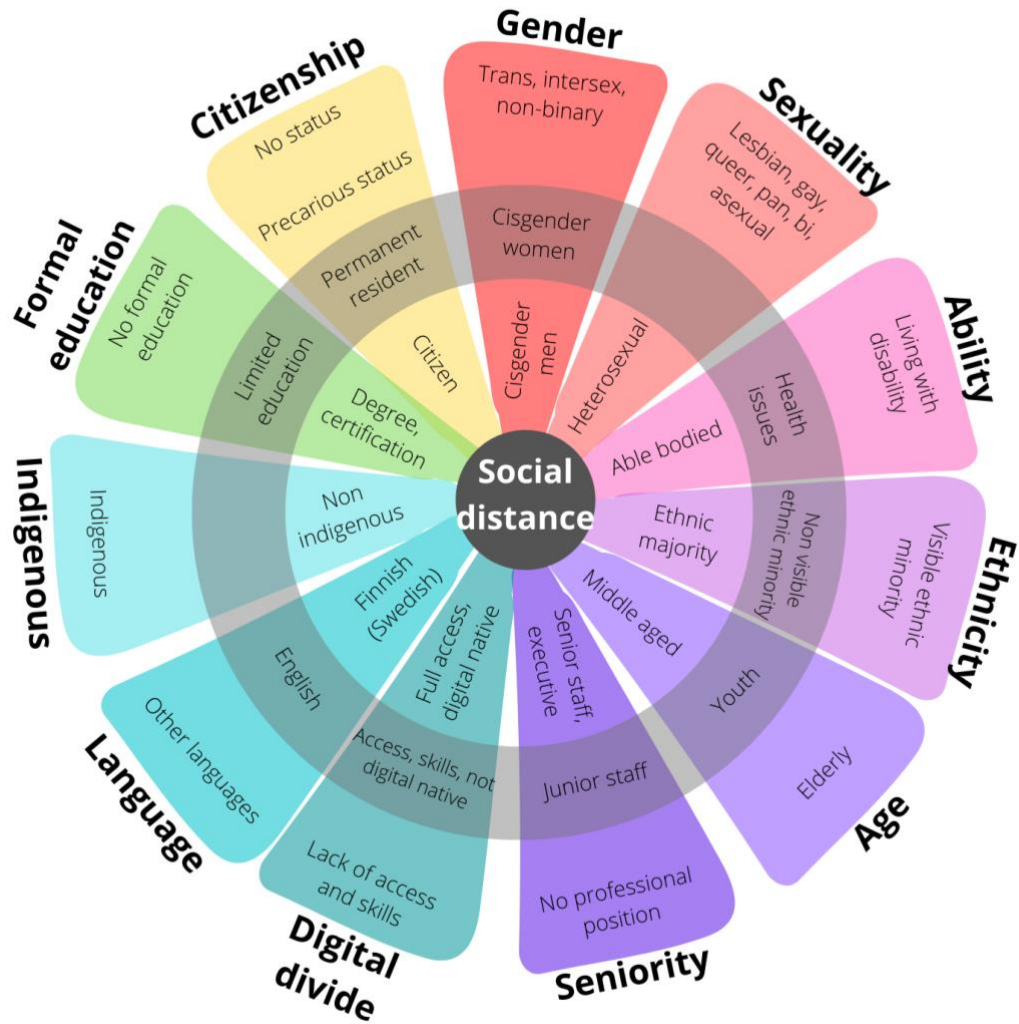

Figure 18: Wheel of social distance. Modified from the wheel of power, Canadian Council for Refugees (2021)

Task: Set the stage for including diversity, equity and inclusion in the design process

Set the stage during a kickoff meeting, either within the team or with the client, by introducing the terms diversity, equity and inclusion. Do a brief exercise called *Set the stage for DEI* to discuss the words. Ask everyone in the team to think about the terms diversity (moninaisuus), equity (tosiasiallinen yhdenvertaisuus) and inclusion (inklusiivisuus) and write on post-it notes what comes to mind when thinking of these words. After the discussion, present the terms, as shown in the modified slide version of Figure 1 below (**Figure 19**). Lastly, discuss whether something was new or surprising. This discussion will serve as a good starting point to the project work.
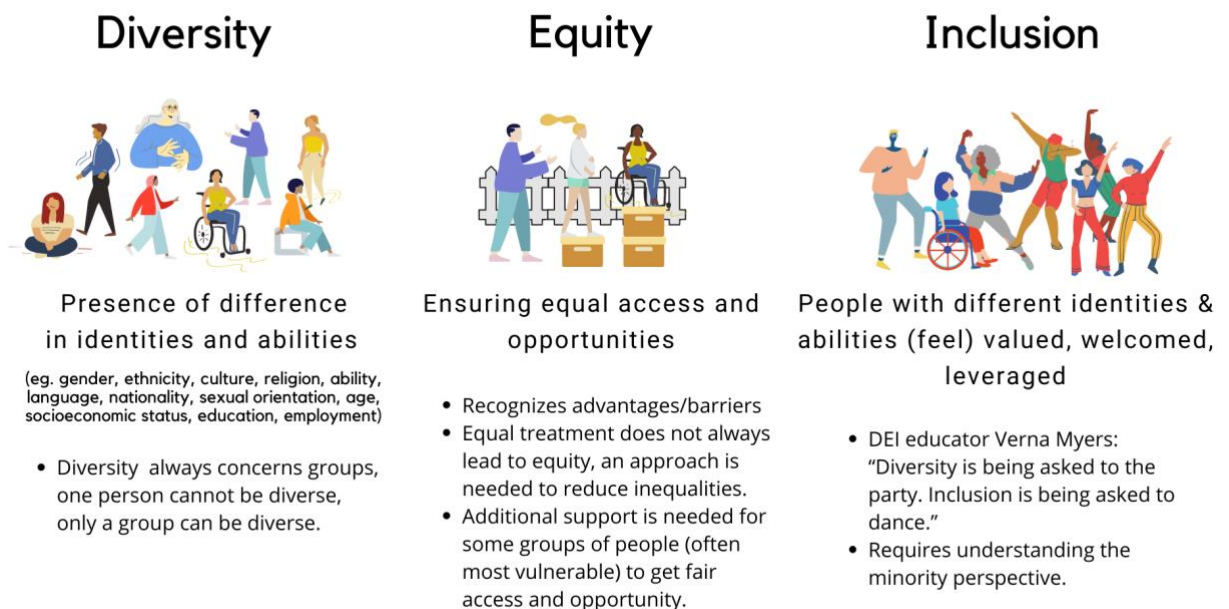

Diversity

Presence of difference
in identities and abilities

(eg. gender, ethnicity, culture, religion, ability, language, nationality, sexual orientation, age, socioeconomic status, education, employment)

- Diversity always concerns groups, one person cannot be diverse, only a group can be diverse.

Equity

Ensuring equal access and
opportunities

- Recognizes advantages/barriers
- Equal treatment does not always lead to equity, an approach is needed to reduce inequalities.
- Additional support is needed for some groups of people (often most vulnerable) to get fair access and opportunity.

Inclusion

People with different identities &
abilities (feel) valued, welcomed,
leveraged

- DEI educator Verna Myers: "Diversity is being asked to the party. Inclusion is being asked to dance."
- Requires understanding the minority perspective.

Figure 19: Slide to be used during Set the stage for DEI

Tool: Diversity, equity and inclusion current state canvas

Utilize the diversity, equity, inclusion current state canvas (**Figure 20**) to develop shared understanding of the current state of diversity, equity and inclusion in the project, who the project might be excluding accidentally and what tools from the Diversity, equity and inclusion design process (**Figures 12-17**) you could use in your design.

Figure 20: Diversity, equity and inclusion current state canvas

5   Conclusions and discussion

5.1   Conclusions

The purpose of this thesis was to develop an understanding of what diversity, equity and inclusion (DEI) mean in the design process of digital public services both for Digitalist Group and their public sector clients. Further, the thesis aimed at identifying how DEI could be systematically incorporated in the design process of digital public services in the future through developing a concrete tool or guideline that designers could utilize when designing digital services for the public sector. During the research process it became clear that both a checklist type of tool and specific tools for creating shared understanding were needed and the final product of the thesis was narrowed down to producing these.

The following research questions guided the research process and led to the development of the outcomes:

1) How are diversity, equity and inclusion understood in relation to designing digital public services?
2) What type of challenges and needs are designers experiencing in designing inclusive digital public services?
3) How can digital public services be designed inclusively?

Through the first question the research aimed at understanding how diversity, equity and inclusion are currently understood in the design process of digital public services. As the research was conducted as a case study with Digitalist Group, the primary target groups for the research were determined to be Digitalist Group designers working with public sector projects and Digitalist Group clients from the public sector. Further in the research process, the participant pool was widened to also include other in-house designers from the public sector and external consultants working with public sector clients. Throughout the research, designers did not make a clear distinction between issues related to diversity, equity and inclusion in the physical and digital worlds and the definition that was co-created during workshop 1 sounds as follows: *"Diversity, equity and inclusion in digital public services means taking people into account holistically as part of society"*.

The second research question helped develop an understanding of the different needs and challenges that designers face in incorporating diversity, equity and inclusion in their work when designing digital public services. Several challenges were identified through the survey, interviews and workshops and validated with designers attending workshop 2. Seven main themes were identified, out of which designers selected "lack of toolkit or guidelines" and "attitude/lack of empathy" as the most significant challenges they face in designing inclusively. In addition to identifying challenges and needs, the research identified that five segments of the population in Finland are often left outside the design process of digital public services. The five groups identified were as follows: elderly people, people belonging to language and cultural minorities, people with disabilities or other circumstances reducing their capability to use digital services, people with lower socioeconomic status and people who are not digitally literate.

The third and final research question tackled the challenges and aimed at producing concrete outcomes that designers in Digitalist Group, the public sector and beyond could use as support in designing truly inclusive digital public services. The research indicated that both a societal level change needs to happen and a change in how the digital public services are designed in practice. The society wide transformation is required for the value of diversity, equity and inclusion to be seen. This in turn would make it easier to prioritize and systematically include DEI in designing digital public services. Five main societal changes were identified as needed: placing empathy at the center of inclusive societies and services, developing understanding of DEI issues in the public sector, increased collaboration within the

public sector, commitment to and funding for DEI on a high level, and finally diversity, equity and inclusion packaged together with accessibility in legal and reporting instruments. In addition to the recommendations on societal change, this research produced four concrete outcomes: a checklist on what issues could be considered in each step of the design process and three concrete tasks/tools that designers can complete either within the design team or with the clients. The checklist was named the *Diversity, equity and inclusion design process* and the tasks/tools were named *Set the stage for DEI, Define your social distance and the Diversity, equity and inclusion current state canvas*.

Through the iterative nature and human centered design methods the research and development process therefore managed to fill all the goals and aims and answer the research questions initially set out for the process.

5.2   Discussion

The need for inclusive design has been identified already decades ago, advances have been made in the design of the physical environment and lately also the digital world in terms of accessibility. Still much remains to be done for digital public services to be designed in ways that produce truly inclusive outcomes. If the transformation into digital public services is not done purposefully and responsibly, the digital divide risks widening and we risk leaving segments of the population behind in the development (Deganis et al. 2021, 1).

The ongoing rapid digitalization of public services places new demands on designers, consultancies developing digital public services and on authorities commissioning and producing these digital public services. Lately high-level discussions on the digital divide have started acknowledging the need for co-creation and a human centered design approach that includes the perspectives of the most marginalized and vulnerable in society (Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation 2020, 8).

The findings and outcomes of this research are valuable both on the level of the individual designer who wants to be more inclusive in their design work and at the company level for Digitalist Group. The benefits from the developed approaches for the individual Digitalist Group designer include improved project management, as such tools assist in planning projects and identifying potential "blind spots". The developed tools provide a useful, systematic framework for considering DEI issues. This was highlighted as especially helpful in public sector projects, where the clientele is vast and diverse.

Further the value extends throughout the public sector in Finland and possibly even further than that. Finland has been identified as a global leader in eGovernment and the provision of digital public services, which can provide opportunities in sharing our Finnish knowhow internationally. (Digital Economy and Society Index 2016 Country Profile Finland 2016, 1; Digital Economy and Society Index 2019 Country Report Finland 2019, 3; Digital Economy and Society Index (DESI) 2020 Finland 2020, 3; UN E-Government Survey 2012: E-Government for the People 2012, 126; UN E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development 2020, 51) As the demand for inclusive design has come from the highest level, through the United Nations General Assembly (2020, 8), providing this type of expertise could both assist in narrowing the digital divide and help Finland position itself as an expert in equitable and inclusive digital services globally.

The practices and recommendations arising through this research could be duplicated and scaled into a range of different design processes, not only when designing digital public services but digital services overall.

5.2.1 Limitations and ethical considerations of the thesis

As the thesis focused on the ***design process***, the research was conducted among design and development professionals and excluded research with the actual end users of digital public services. The end users were excluded from the scope of the research both for practical and ethical reasons. As research in diversity, equity and inclusion would have required speaking to the most vulnerable to determine their experiences in using digital public services, deeper ethical considerations, and a research permit would have been required. For the purpose of this study, neither the ethical advance evaluation or research permit mentioned in the Arene guidelines were required. (Arene 2020, 21-22.)

The research followed the guidelines set in the responsible conduct of research (RCR Guidelines 2012, 30). All data collection, analysis and reporting followed standard research methods utilized in case study research and was therefore also ethically sustainable. All research and other sources utilized in this thesis were appropriately cited and participants included in this study were notified of the purpose and scope of the study. They were also made aware that all of the data would be anonymized and therefore none of the information collected could be connected to them. Informed consent was obtained from workshop participants through a consent form.

The participants in this study were recruited through Digitalist Group clients, social media and through directly contacting service designers and development professionals in the public sector through email. The majority of participants saw the call for participation in one of the

Finnish service design Facebook groups. Although the call for participation was distributed widely, the process may have been biased toward social media users, contributing to sampling bias. Although this possibility for this sampling bias, all participants represented the correct population and were all designers or development professionals designing digital public services either in the public sector or for the public sector.

The main limitation of this thesis is the question of generalizability. Can we assume that the results provide insight to the design of digital public services in Finland? Or do the results apply elsewhere also? Could we perhaps learn something beyond the public sector as well? Or are the results only indicative of the participants and organizations that were involved? The usefulness of the case study research methodology is that it offers insight into complex phenomena. It provides deep and detailed information on the case. (Ojasalo et al. 2014, 52.) What case studies do not provide however is statistically significant data for generalizing results on the population level (Yin 2018, 45). The research process included both quantitative and qualitative data, but none of the collected data provided statistically representative and generalizable data. This is typical of qualitative research (Ojasalo et al. 2014, 121).

The intention of the thesis was not to generalize, but to provide useful insight and suggestions for the future of designing truly inclusive digital public services. The thesis followed an iterative process, where both data triangulation and investigator triangulation improved the reliability of the collected data. The triangulation led to data saturation in terms of challenges experienced and in identifying what population groups are generally left outside the design process of digital public services. Therefore it is safe to assume that the results of the thesis are useful and provide correct insights into the design process of digital public services in Finland. It even provides valuable insight outside of that and particularly the concrete tools can be of value in the design process of inclusive digital services outside of the initial intended audience as discussed above.

5.2.2   Future considerations

First, the outcomes of this research do not cover the full range of actions required throughout the research process to include diversity, equity and inclusion in the design of digital public services. This thesis outlined the different issues to be considered throughout the design process and provided three tools/tasks to support the designing. Future focus should be placed on developing additional tools for the other phases of the design process, that the tools produced in this process did not cover. It is crucial to include the minority perspective also in this upcoming work. Much more goes into developing digital public services than design and future research and development should focus on expanding the thinking beyond design

into architecture, development and others. The current tools are not digitalized and so another future consideration would be to create a digital open source workbook that includes all the DEI tools that can be used throughout the design, architecture, development and other processes.

Secondly, Finland has existing legislation guiding the physical world but legislation guiding the digital environment is still lacking in many ways. Currently the Act on the Provision of Digital Services covers accessibility and is prioritized during the development of digital services. For DEI to be incorporated in the design of digital services, it could be beneficial if the Nondiscrimination Act (1325/2014) and the Act on Equality between Women and Men (609/1986) could be adjusted to also include the digital spheres of society.

Lastly, increased collaboration on all levels is required for the work on inclusive digital public services to trickle down throughout society, from individual companies, individual pioneers and individual champions for inclusion to all of society. Participants in this research process were all champions for including diversity, equity and inclusion in the design process of digital public services and the workshops and discussions in this research process were seen as valuable for increasing cooperation between different authorities. Future increased cooperation and exchange of ideas between different parties and authorities would allow sharing good practices for duplication and break down the silos that currently exist within the public sector.

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Interview with Nirhamo, M. 2021. Digitalist Group.

Figures

Tables

Appendices

Appendix 1: Substance questions of survey

1. How important do you think it is to systematically incorporate diversity, equity, inclusion in the design process of digital public services? Scale 1-10.
2. What challenges do you face in including diversity, equity and inclusion in the design process of digital services?
3. What methods, approaches or tools do you currently use to include diversity, equity and inclusion in the design process of digital public services? Please define in what stage of the design/development process you use these methods/approaches/tools.
4. What things would help you include diversity, equity and inclusion systematically throughout the design process?
5. What aspects do you consider most important to include in the design process of digital services in terms of diversity, equity and inclusion? Scale 1, not important to 5, very important
   a. Gender
   b. Age
   c. Gender identity
   d. Sexual orientation
   e. Nationality
   f. Ethnicity
   g. Language
   h. Health status
6. In addition to the above question, what other considerations do you think are important?
7. Any other comments on the topic?

Appendix 2: Semi-structured interview questions

Background questions:

1. What gender do you identify with?
2. What is your age?
3. Do you identify with a minority? Which one?
4. Tell me a little bit about your design experience, how long have you been a designer?

Questions related to gaps and challenges when it comes to diversity, equity and inclusion:

1. What do diversity, equity and inclusion mean to you?
2. Do you think diversity, equity and inclusion are included enough in the design process of digital public services?
   a. If yes, How are they currently included? In what stage of the design process?
   b. If no, why do you think they're not included?
3. What are the main challenges in including diversity, equity and inclusion in the design process of digital public services?
4. Can you think of any groups of people who are often forgotten from the design process?
5. What in your opinion are the different aspects of diversity, equity and inclusion that should be considered in the design process?
   a. Follow up: In what stage of the design process?
6. What tools or methods already exist to help include diversity, equity and inclusion in the design of digital public services?
7. What are the current gaps in tools/methods/approaches to designing truly equal&inclusive digital services?
8. What do the terms Inclusive design, Design for all, Universal design mean to you?
   a. Follow up question: In what type of situations have these come up in your work?
9. What do you think would be the low hanging fruit, the easy fixes in incorporating diversity, equity and inclusion in the design process in the future?

Appendix 3: Affinity diagram based on workshop participants' analysis of data on challenges

8 min: Haasteisiin tutustuminen
1) Lue kaikki keltaiset laput
2) Tuleeko mieleen muita haasteita? Kirjoita ne uusille post-it lapuille. Yksi haaste/lappu.

Haasteet: Miksi yhdenvertaisuus on vaikea sisällyttää julkisten digitaalisten palveluiden muotoiluprosessiin?

- Haasteisiin tutustuminen ja täydentäminen.
- Keskustelu ja haasteiden teemoittelu.
- Yläteemojen äänestys ja teemojen valinta jatkotyöstöön.

35 min

Asiakaslähtöisyys /palvelumuotoilu puuttuu

Käyttäjäymmärrystä ei ymmärretä aina edes tehdä/ ajatellaan että tiedetään, mitä käyttäjä kuitenkin haluaa

Usein perusoletttamus on, että asiakkaat ovat valkoisia ja heteroja.

Kieliversioiden tarjoaminen ilman, että käytettävyys kärsii

Käyttäjätutkimuksesta persooniin siirryttäessä on riski, että yleistetään ja poissuljetaan liikaa

Palvelu tehdään ensin "normille" ja myöhemmin yritetään mahduttaa mukaan vähemmistöjen tarpeet

Palvelusta tulee monimukainen / sekava, jos kaikkien erityisryhmien tarpeet on huomioitava

Siiloissa kehitetyt palvelut, puuttuva kokonaiskuva

Resurssikysymys

Tiukat budjetit ja aikataulut.

MVP-ajattelu pakottaa leikkaamaan ominaisuuksia, jotka auttaisivat ihmisiä

Yhdenvertaisuus nähdään peruspalvelun päälle/lisäksi rakennettavana asiana.

Kehittämisessä joudutaan tekemään kompromisseja, ja niitä tehdään sellaisista asioista, jotka eivät ole nk. betoniporsaita eli kaikkien hyväksymiä itsestäänselvyyksiä. Yhdenvertaisuus ei ole itsestäänselvyys.

Tahtotilaa on, mutta ei resursseja (raha+aika)

Rajallisten resurssien takia on oiottava, yhdenvertaisuus saattaa olla mukana paperilla, mutta ei toteutuksessa.

Resurssit (raha+aika) ei riitä hyvän palvelun, saavutettavuuden JA yhdenvertaisuuden huomioimiseen

Burnout/paine olla nopea -> vaikea omaksua uusia asioita

Työkalupakki puuttuu

Organisaatioissa ei ole yhteisiä linjauksia tai malleja, miten yhdenvertaisuus tulisi huomioida. Riippuu paljon yksittäisistä henkilöistä.

Tiedon puute digitaalisten palveluiden löytämiseen ja käyttöön liittyen

Ei määritelmää, mallia, ohjetta, työkaluja yhdenvertaisuuden sisällyttämiseen

Vaikea varmistaa, että suunnitteluvaiheessa huomioidut asiat pysyvät mukana kehitysvaiheessa.

Hankintalaki on perusta palveluntarjoajien palkkaamiselle, vaikea perustella yhdenvertaisuutta kriteerinä

Ei yleisiä käytäntöjä. Vaikea tietää, suostuvatko asiakkaat käyttämään resursseja yhdenvertaisuuden huomioimiseen.

Asenne/ empatian puute

Ajattelumalli: "koskee vain niin pientä osaa ihmisiä, ihan liian vaikeaa ja kallista toteuttaa näin pientä joukkoa varten"

Asenne: yhdenvertaisuus nähdään lisätaakkana

Yhdenvertaisuuden ja monimuotoisuuden arvoa ei nähdä.

On tehtävä oletuksia sellaisten vähemmistöjen puolesta, jotka eivät ole mukana prosessissa

Erityisryhmät voivat tuntua kiusallisilta/ ei ole kohdattu/ oletus "tavallisesta ihmisestä"

Asiakkaiden moninaisuus, mukaan lukien vammaiset

Pelko, että ei osata tehdä kuitenkaan oikein, eikä voida luvata palvelun yhdenvertaisuutta.

Tuoteomistajien sitoutumattomuus yhdenvertaisuuteen

Vähemmistöjen osallistamisen vaikeus

Erilaisten osallistujien löytäminen vaikeaa

Osallistujat tulevat yleensä olemassa olevista verkostoista.

Halutaan monimuotoinen osallistujaporukka: Miten kysyä osallistujilta näkymättömistä ominaisuuksista, esim. uskonto, hienotunteisesti?

Vaikea sisällyttää ihmisiä, jotka puhuvat eri kieliä

Potilaiden osallistaminen mahdotonta, tutkimuksissa vain ilmoittautuneita.

Emme tilastoi esim. asiakkaiden etnisyyttä tai muunsukupuolisuutta -> vaikea motivoida kehittäjiä huomioimaan kun ei tiedetä montaako koskee erityistarpeet

Tutkimusvaiheessa vaikea sisällyttää vähemmistöjä pieniin ryhmiin.

Vaikea osallistaa käyttäjiä, jotka eivät käytä teknologiaa sujuvasti, esim vanhukset ja lukutaidottomat.

Suunnittelutiimistä puuttuu henkilökohtainen vähemmistökokemus

Puutteellinen ymmärrys/ osaaminen

Vähän ymmärrystä yhdenvertaisuudesta liike-elämässä.

Vaikeaa arvioida käytettävyyttä henkilöillä, joilla on kognitiivisia haasteita.

Tiedon puute yhdenvertaisuudesta ja monimuotoisuudesta

Vähemmistö-näkökulmaa ei ymmärretä.

Suunnittelutiimissä puuttuu ymmärrys/tietotaito, miten huomioida yhdenvertaisuus ja saavutettavuus

Yhdenvertaisuus ei ole lähtöajatuksena, vaan tulee mukaan vasta liian myöhään.

On tehtävä oletuksia sellaisten vähemmistöjen puolesta, jotka eivät ole mukana prosessissa

Jopa lainsäädännöllisiä vähemmistöjä on vaikea sisällyttää, toisia vielä vaikeampi.

Yhdenvertaisuus nähdään kapeasti

Palvelut perustuvat teksteille - ei harkita muunlaisia käyttöliittymiä

Ei tunneta lainsäädäntöä

Kognitiivinen saavutettavuus ei ole vielä pakollinen.

Vähemmistö-näkökulmaa ei ymmärretä.

Selkokieltä tai selkeän kielen tuottamisen käytäntöjä ei tunneta