Digitalisation and digital transformation in Iceland

Implications for persons with disabilities

June 2021

EUROPEAN COMMISSION
Directorate-General for Employment, Social Affairs and Inclusion
Directorate D — Social Rights and Inclusion
Unit D3 — Disability and Inclusion

European Commission
B-1049 Brussels

EUROPEAN COMMISSION

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This report has been developed under Contract VC/2020/0273 with the European Commission.

Directorate-General for Employment, Social Affairs and Inclusion

Luxembourg: Publications Office of the European Union, 2021

PDF ISBN 978-92-76-42565-6 DOI: 10.2767/267527 KE-09-21-463-EN-N

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1 Executive summary

The government-led digital strategies at the national level in Iceland are either becoming outdated and primarily focused on web accessibility, such as the Web Accessibility Strategy (*Aðgengisstefna fyrir opinbera vefi*) from 2012,[1] or else are more broadly concerned with digitalisation, such as the more recent Stafrænt Ísland (Digital Iceland) initiative,[2] but lack much of a disability specific focus. Some sector specific strategies that include a digital focus, such as the national policy for the Icelandic Health Services to 2030,[3] contain very little about disability.[4] Other sector specific strategies, such as the 2018-2022 Strategy on Language Technology in Support of the Icelandic Language,[5] contain references to, for example, text-to-speech software, speech-recognition and speech-to-text, and argues for the importance of making these technologies available in Icelandic based formats to a wide variety of user needs. As such in Iceland at the national level strategies on digitalisation and digital transformation are uneven in regard to disability inclusion.

However, the impact of national-level strategies can most likely be felt at the municipal level via funding. The municipalities in Iceland play an important role in providing services to disabled people, and this is where some digital inclusion work is being done. An example of this is the City of Reykjavík's Green Plan' (*Græna Planið*).[6] While neither a digital strategy nor a disability specific plan, the Green Plan nevertheless contains a focus on digital transformations which include the modernisation of services on the basis of the population with improved access to services for city residents including people with disabilities. One of the key goals of the plan as stated: "The city's digital transformation will facilitate information access for all groups and ultimately give them a voice."[7] During a meeting of Reykjavík City Council (25 March 2021 - Fundur nr. 5622)[8] the City Council agreed to provide ISK 3 billion in digital transformations.

The national level disability strategy does not effectively address the challenges of digitalisation. Iceland's national disability strategy is known as Þingsályktun um stefnu og framkvæmdaáætlun í málefnum fatlaðs fólks fyrir árin 2017–2021 (Parliamentary Resolution on Policy and Action Plan on the Affairs of Disabled People for the years 2017–2021).[9] Section A.4, as part of the accessibility component, mentions digitalisation only in the context of web accessibility rather than the more

1 Government of Iceland. 2012. Aðgengisstefna fyrir opinbera vefi. https://www.stjornarradid.is/verkefni/stafraent-island/opinberir-vefir/adgengisstefna/.
2 Stafrænt Ísland (Digital Iceland). https://island.is/stafraent-island.
3 Government of Iceland. 2019. Heilbrigðisstefna Stefna fyrir íslenska heilbrigðisþjónustu til ársins 2030. https://www.stjornarradid.is/library/04-Raduneytin/Heilbrigdisraduneytid/ymsar-skrar/Heilbrigdisstefna_4.juli.pdf.
4 The only reference to disability in this document is the caution (in two places) that certain groups needs special consideration in regard to access to healthcare, but the strategy offers no specific information or guidelines. There is no mention of accessibility in regard to disability.
5 Mennta- og menningarmálaráðuneytið. 2017. *Máltækni fyrir íslensku 2018-2022*. https://www.stjornarradid.is/library/03-Verkefni/Menningarmal/M%C3%A1lt%C3%A6kni%C3%A1%C3%A6tlun.pdf.
6 City of Reykjavík. 2021. *Græna Planið*. https://graenaplanid.reykjavik.is/.
7 City of Reykjavík. 2021. *Græna Planið*. https://graenaplanid.reykjavik.is/.
8 City of Reykjavík. 2021. City Council Meeting March 25, 2021. Meeting 5622). https://www.reykjavik.is/fundargerdir/fundur-nr-5622.
9 Alþingi (Parliament of Iceland). 2017. *Þingsályktun um stefnu og framkvæmdaáætlun í málefnum fatlaðs fólks fyrir árin 2017–2021* (Parliamentary resolution on policy and action plan on the affairs of disabled people for the years 2017–2021). https://www.althingi.is/altext/146/s/1000.html.

comprehensive issues pertaining to digital transformations. There are no sector specific disability strategies in Iceland.

There is little evidence that we know of regarding the experiences of persons with disabilities with respect to digitalisation in Iceland.

Good practices

- The City of Reykjavík's 'the Green Plan' (*Græna Planið*).[10] While neither a digital strategy nor a disability specific plan, the Green Plan nevertheless contains a focus on digital transformations which include the modernisation of services on the basis of the population with improved access to services for city residents including people with disabilities. The Plan includes a budget for digital transformations; the Plan's ideology is a based upon diversity and inclusion; and specialists working in the field of digital transformations pertaining to the City's services have been working with disabled people's organisations and individual users with the goal of ensuring that new digital services are accessible.

- Some sector specific strategies pertaining to digital transformation and IT that are not primarily focused on disability nevertheless made a clear commitment to working on matters of accessibility. One example of a good practice in this area is the 2018-2022 Strategy on Language Technology in Support of the Icelandic Language,[11] from the Ministry of Education, Science and Culture and which primarily concerns the implications of digitalisation and digital transformations for the Icelandic language. The implementation of this strategy is being led by the Language and Voice Lab at the University of Reykjavík and works in conjunction with a DPO (Icelandic Association of the Visually Impaired) on a number of projects which have direct implications for their users, such as Machine Translation (MT) of Icelandic and English; Automatic speech recognition (ASR) for Icelandic; and Text-to-Speech (TTS) for Icelandic speech synthesis.[12]

Recommendations

- The significance of digitalisation and digital transformations is generally recognised by the Icelandic government. However, in regard to issues of accessibility and inclusion in the context of disability the key emphasis appears to be 'web accessibility,' or more specifically accessibility pertaining to public websites. The broader implications of digitalisation need to be included into national strategies and practices pertaining to disability inclusion.

- Disability strategies in Iceland overlook issues of digitalisation, whereas sector specific digital strategies overlook disability inclusion. Future national and municipal disability strategies need to include a more comprehensive and informed vision of digitalisation and sector specific strategies needs to include a disability perspective.

[10] City of Reykjavík. 2021. *Græna Planið*. https://graenaplanid.reykjavik.is/.
[11] Mennta- og menningarmálaráðuneytið. 2017. *Máltækni fyrir íslensku 2018-2022*. https://www.stjornarradid.is/library/03-Verkefni/Menningarmal/M%C3%A1lt%C3%A6kni%C3%A1%C3%A6tlun.pdf.
[12] Language and Voice Lab. "Language Technology for Icelandic 2018-2022." https://lvl.ru.is/current-projects/.

- The work being done at the City of Reykjavík, such as through the Green Plan, on digitalisation and disability inclusion is an example of good practice. However, it is unclear if this work will inform other municipalities around the country. There are some signs that other municipalities are producing their own digital strategies, though the attention to disability inclusion in the Reykjavík plan is something other municipalities could emulate.

- Specific digital initiatives at the level of the municipality are not enough to ensure that all disabled people in the country benefit from digitalisation and that digital gaps will not widen. National level leadership in this area is required, and a task force between national level Ministries, municipalities, industry stakeholders, DPOs and users could help to address these issues.

- While there are some positive examples to be found, it would appear that training in disability inclusion in various relevant fields is uneven or else an afterthought. Enhanced training in digital accessibility and inclusion should be a cornerstone of education and training in these fields to ensure that new technologies and services are designed inclusively, as opposed to patchwork of efforts after the fact.

2 Are government strategies and plans on digitalisation and digital transformation disability-inclusive?

2.1 Disability inclusion in generic strategies on digitalisation and digital transformation

The overarching national level generic strategy on digitalisation and digital transformation in Iceland is the Web Accessibility Strategy (*Aðgengisstefna fyrir opinbera vefi*) from 2012.[13] However, as noted in the title, this is mainly concerned with web accessibility. In May 2012, the government of Iceland approved an accessibility policy for public websites to ensure accessibility for people with visual impairments and others who need to use assistive devices or technology in order to access the general web. The criteria in the policy followed the standard of the international organisation at the time, W3C (WCAG 2.0 AA). The strategy states that it was "introduced to stakeholders," and it "went through an extensive consultation process under the auspices of the Ministry of the Interior," but lacks any further details. A number of instruments for implementation are listed, such as that material included (in public websites) must be accessible for users, such as through the use of larger fonts, braille, or text-to-audio. Other issues covered include public procurement of software and that sellers must demonstrate accessibility compliance. However, the strategy generally lacks overall detail as to how implementation will be monitored and compliance will be enforced, or references to any measures concerning the larger impact of digitalisation and digital transformation on persons with disabilities.

A more recent report published by the Government of Iceland in 2020, Stafræn umskipti ríkisins or Digital Transition of the State,[14] acknowledged the importance and significance of digital transformations, but said little about access and nothing about disability specifically.

The entity tasked with implementing the Government of Iceland's general digital communication goals is Stafrænt Ísland, or 'Digital Iceland.'[15] The Government's over-arching goal is that digital communication is to be the primary means of communication between the public and private sectors; Digital Iceland, which is overseen by the Icelandic Ministry of Finance and Economic Affairs, has been tasked with achieving this goal. Linked to Digital Iceland is the Island.is web portal, which is a critically important digital tool in Iceland for accessing a range of services and information. Digital Iceland appears to have no specific strategy or specific instruments or measures pertaining to accessibility beyond a general statement: "We ensure that Ísland.is service is accessible to all users. This means that it must be convenient for people with disabilities, elderly people or people who have difficulty using digital services. We are working with experts in this field and place great emphasis on accessibility."[16] However, there is a recognition within the Digital Iceland that not all

[13] Government of Iceland. 2012. Aðgengisstefna fyrir opinbera vefi. https://www.stjornarradid.is/verkefni/stafraent-island/opinberir-vefir/adgengisstefna/.

[14] Government of Iceland. 2020. Stafræn umskipti ríkisins - september 2020 (Digital transition of the state). https://www.stjornarradid.is/library/02-Rit--skyrslur-og-skrar/Stafr%c3%a6n%20umskipti%20r%c3%adksins%20-%20september%202020%20(002).pdf.

[15] Stafrænt Ísland (Digital Iceland). https://island.is/stafraent-island.

[16] Stafrænt Ísland (Digital Iceland). "Aðgengi fyrir alla" (Accessibility for all) https://island.is/stafraent-island.

users have the same needs: “We define users and their needs and expectations. We conduct user research and testing to ensure that the service is tailored to them.”[17]

In Iceland, the municipalities provide a significant level of services and programmes that impact upon the lives of disabled people, and as such developments at the level of the municipalities are perhaps of greater significance than the national level. However, as discussed in Section 4.1 of this report, the role of the national government has been of crucial significance through funding provided to the municipalities in areas such as strengthening digital administration. The City of Reykjavík, the largest by population municipality, is often the leader in this area. At the City, digital transformations have been included as part of ‘the Green Plan’ (*Græna Planið*).[18] A key component of the Green Plan is “Equality and welfare regardless of background, Society for all.” In addition, we learned that the leader of digital transformation at the Welfare Office in the City of Reykjavík is a disabled person. This includes leadership in developing and implementing digital transformation in all welfare services, including disability services.

The Association of Icelandic Municipalities (Samband Íslenskra Sveitarfélaga, SÍS) developed a digital strategy covering 2018-2022. The purpose of this strategy is to enhance cooperation between different municipalities in order to make it easier for them to become active participants in digital development and utilize modern technology to improve services and communication. A report on this work was produced in May of 2020 in association with the company CoreMotif, a business specializing in management consulting with a focusing on technology.[19] CoreMotif produced a questionnaire about digitalisation with data collection over the later part of 2019 and early 2020. According to the findings in the report, more technological services need to be implemented and utilized by the differing municipalities in general. However, the needs of disabled people were recognised in the survey as one question inquired into how disabled individuals apply for services from the municipality and how applications concerning services for disabled people were processed on a municipal level.

2.2 Disability inclusion in focused or sector-specific strategies on digitalisation and digital transformation

1.) The National Policy for the Icelandic Health Services to 2030 (*Heilbrigðisstefna: Stefna fyrir íslenska heilbrigðisþjónustu til ársins 2030*),[20] while not a strategy that specifically concerns digital issues, nevertheless includes a significant digital and e-health focus with implications for disabled, as well as older, people with accessibility needs. What is relevant about the policy for disability issues is more what it does not contain than does. The policy recognises that IT and digital solutions are key to

[17] Stafrænt Ísland (Digital Iceland). “Aðgengi fyrir alla” (Accessibility for all) https://island.is/stafraent-island.

[18] City of Reykjavík. 2021. *Græna Planið*. https://graenaplanid.reykjavik.is/.

[19] CoreMotif. 2020. “Stöðumat og undirbúningur á stafrænni vegferð sveitarfélaga.” (Status assessment and preparation of the digital progress of municipalities). https://ibuagatt.fjallabyggd.is/meetingsearch/displaydocument.aspx?itemid=u8SvYci_ZkqXABdtpgVi1Q&meetingid=2008008F%20%20%20%20%20%20%20&filename=Sk%C3%BDrsla&cc=Document.

[20] Government of Iceland. 2019. Heilbrigðisstefna Stefna fyrir íslenska heilbrigðisþjónustu til ársins 2030. https://www.stjornarradid.is/library/04-Raduneytin/Heilbrigdisraduneytid/ymsar-skrar/Heilbrigdisstefna_4.juli.pdf.

developing the healthcare system in Iceland for the years to come. However, very little references to disability are made. For example, in the section entitled 'Active Users,' there is no mention of disabled people or any inclusion of disabled people or others who have a hard time utilising technology. One brief mention is made (p. 10) that access to healthcare in Iceland is uneven and that people with mental or physical impairments, severe mental health challenges, addiction and other forms of disability can have a hard time using the services available if special actions are not implemented. However, nothing is stated as to what these special actions entail nor how they would be implemented.

2.) The 2018-2022 Strategy on Language Technology in Support of the Icelandic Language,[21] from the Ministry of Education, Science and Culture (Mennta- og menningarmálaráðuneytið), primarily concerns the implications of digitalisation and digital transformations for the Icelandic language. However, the strategy contains a number of references to disability and the implications of these technologies for disabled people. The strategy references a number of existing technologies, such as digital assistants like Siri and Alexa, text-to-speech software, speech-recognition and speech-to-text, and argues for the importance of making these technologies available in Icelandic based formats. The implementation of this strategy is led by the Language and Voice Lab at the University of Reykjavík. The project also works with Blindrafelagið (Icelandic Association of the Visually Impaired (BIAVI)) on a number of projects which have direct implications for their users, such as Machine Translation (MT) of Icelandic and English; Automatic speech recognition (ASR) for Icelandic; and Text-to-Speech (TTS) for Icelandic speech synthesis.[22]

3.) Another focused strategy concerning digital transformations in Iceland is the Strategy on Artificial Intelligence (*Stefna Íslands um gervigreind*) published by the Prime Minister's Office (Forsætisráðuneytið) in April 2021.[23] While this is not a disability specific strategy, there are some implications for disabled people. The policy strategy places an emphasis upon what it refers to as 'diversity, equality, and fairness.' One example of such is a reference, albeit broad and not very specific, that AI needs to be accessible to everyone, regardless of disability in order to support diversity (p. 29).

[21] Mennta- og menningarmálaráðuneytið. 2017. *Máltækni fyrir íslensku 2018-2022*. https://www.stjornarradid.is/library/03-Verkefni/Menningarmal/M%C3%A1lt%C3%A6kni%C3%A1%C3%A6tlun.pdf.

[22] Language and Voice Lab. "Language Technology for Icelandic 2018-2022." https://lvl.ru.is/current-projects/.

[23] Prime Minister's Office (Forsætisráðuneytið). 2021. Stefna Íslands um gervigreind (Iceland's policy on artificial intelligence). https://www.stjornarradid.is/library/01--Frettatengt---myndir-og-skrar/FOR/Fylgiskjol-i-frett/08.04.21_Stefna%20%C3%8Dslands%20um%20gervigreind_loka.pdf.

3 Do disability strategies address the potential of and challenges pertaining to digitalisation and digital transformation?

3.1 How digitalisation and digital transformation are addressed in the national disability strategy

Iceland's national disability strategy is known as Þingsályktun um stefnu og framkvæmdaáætlun í málefnum fatlaðs fólks fyrir árin 2017–2021 (Parliamentary Resolution on Policy and Action Plan on the Affairs of Disabled People for the years 2017–2021).[24] Section A.4, as part of the accessibility component, mentions digitalisation only in the context of web accessibility. The goal of section A.4 is stated to concern: 'Accessible information about rights, services and other content.' The aim: 'To enable people with disabilities to access information about their rights and services.' Under the description are listed a number of items: 'Websites, educational materials and information, such as rights and services, are accessible to people with disabilities in an easy-to-understand language and are based on a universal design methodology. Sign language interpretation will be accessible as well as Braille, text and information, both written and electronic, in easy-to-understand language. Municipal websites will have information on traffic and wheelchair access.' The responsible party is listed as the Ministry of Welfare (Velferðarráðuneytið), which no longer exists and has since be re-organised as Félagsmálaráðuneytið or Ministry of Social Affairs. There is very little detail about specific goals and measures regarding implementation beyond the statement that the 'measurable goal' is: 'Percentage of disabled people who believe they can access information about rights and services.' It is also stated that 'Public bodies make timed plans for improvements in accessibility in the above areas, which are reassessed every other year.' It is not clear from the texts of this action plan if these assessments are made, by whom and how their findings are disseminated. The only information that is provided are examples of some partners, including for example the Association of Icelandic Municipalities and disabled people's organisations.

3.2 How digitalisation and digital transformation are addressed in specific disability-related strategies

There are no other specific disability-related strategies in Iceland aside from the Parliamentary Resolution on Policy and Action Plan on the Affairs of Disabled People for the years 2017–2021 discussed in section 3.1. There are a number of disability-specific laws in Iceland, but none of them, to our knowledge, contain any references to digitalisation or digital transformation. However, at the municipal level, the City of Reykjavík's 'Green Plan' (*Græna Planið*)[25] includes a provision of ISK 10 billion for digital transformations over the next 2 years as part of the Green Plan. During a meeting of Reykjavík City Council (25 March 2021 - Fundur nr. 5622)[26] the City Council agreed to provide ISK 3 billion in digital transformations which include the modernisation of services on the basis of the population with improved access to services for city residents including people with disabilities. Our team has a number of reliable contacts within the City of Reykjavík and we were informed that specialists

[24] Alþingi (Parliament of Iceland). 2017. *Þingsályktun um stefnu og framkvæmdaáætlun í málefnum fatlaðs fólks fyrir árin 2017–2021* (Parliamentary resolution on policy and action plan on the affairs of disabled people for the years 2017–2021). https://www.althingi.is/altext/146/s/1000.html.

[25] City of Reykjavík. 2021. *Græna Planið*. https://graenaplanid.reykjavik.is/.

[26] City of Reykjavík. 2021. City Council Meeting 25 March 2021. Meeting 5622). https://www.reykjavik.is/fundargerdir/fundur-nr-5622.

working in the field of digital transformations pertaining to the City's services have been working with disabled people's organisations and individual users with the goal of ensuring that new digital services are accessible. As other municipalities follow suit with their own digital strategies and hire digital specialists and leaders, as one municipality in south Iceland recently invested ISK 25 million in their digital strategy,[27] there are significant possibilities that the funding of these strategies will improve accessibility in this area.

[27] Skaftárhreppur. 2021. "25 miljóna styrkur til stafræns Suðurlands" (ISK 25 million grant for the digital South). https://www.klaustur.is/is/mannlif/frettir/enginn-titill-20#:~:text=Verkefni%C3%B0%20Stafr%C3%A6nt%20Su%C3%B0urland%20er%20undirverkefni%20%C3%BEess%20og%20er,a%C3%B0%20hefja%20verkefni%C3%B0%20og%20vinna%20a%C3%B0%20fyrsta%20%C3%A1fanga.

4 Promoting disability inclusion through funding, education and training

4.1 How funding promotes disability-inclusive digitalisation and digital transformation

We are not aware of a disability perspective being taken with regard to funding the development and roll out of digitalisation and digital transformation at the national level in Iceland. However, the situation concerning the funding of digital transformations in some of Iceland's municipalities is a little different. The City of Reykjavík's 'Green Plan' (*Græna Planið*)[28] includes a provision of ISK 10 billion for digital transformations over the next 2 years as part of the Green Plan. During a meeting of Reykjavík City Council (25 March 2021 - Fundur nr. 5622)[29] the City Council agreed to provide ISK 3 billion in digital transformations which include the modernisation of services on the basis of the population with improved access to services for city residents including people with disabilities. Our team has a number of reliable contacts within the City of Reykjavík and we were informed that specialists working in the field of digital transformations pertaining to the City's services have been working with disabled people's organisations and individual users with the goal of ensuring that new digital services are accessible. As other municipalities follow suit with their own digital strategies and hire digital specialists and leaders, as one municipality in south Iceland recently invested ISK 25 million in their digital strategy,[30] there are significant possibilities that the funding of these strategies will improve accessibility in this area.

It must be noted that the digital transformations that are planned and enacted at the municipal level are made possible through state-level subsidies. For example, in the Supplementary Budget 2020 (Fjáraukalög 2020),[31] a temporary contribution of ISK 100 million was to be used to strengthen digital administration and municipal services. There is no stipulation that any of this funding is ear-marked specifically for accessibility matters, this funding nevertheless plays a role in the ability of municipalities to address accessibility matters in their own digital strategies.

4.2 How disability inclusion is promoted through the education and training of digital professionals

Our team had difficulty determining the extent to which digital inclusion and accessibility is addressed in the education and training of digital professionals and inclusion professionals in Iceland. What we could learn suggests that training is uneven in this area. Some course offerings do include training in this area. For example, an instructor for Reykjavík University's Analysis and Design of Software (Greining og Hönnunn Hugbúnaðar - T-216-GHOH)[32] informed us that accessibility is discussed in the course, such as in regard to people with visual impairments, and neurodiversity is

[28] City of Reykjavík. 2021. *Græna Planið*. https://graenaplanid.reykjavik.is/.
[29] City of Reykjavík. 2021. City Council Meeting 25 March 2021. Meeting 5622). https://www.reykjavik.is/fundargerdir/fundur-nr-5622.
[30] Skaftárhreppur. 2021. "25 miljóna styrkur til stafræns Suðurlands" (ISK 25 million grant for the digital South). https://www.klaustur.is/is/mannlif/frettir/enginn-titill-20#:~:text=Verkefni%C3%B0%20Stafr%C3%A6nt%20Su%C3%B0urland%20er%20undirverkefni%20%C3%BEess%20og%20er,a%C3%B0%20hefja%20verkefni%C3%B0%20og%20vinna%20a%C3%B0%20fyrsta%20%C3%A1fanga.
[31] Alþingi. Parliament of Iceland. Fjáraukalög 2020 (Supplementary Budget). Lög nr. 36/2020. https://www.althingi.is/thingstorf/thingmalalistar-eftir-thingum/ferill/?ltg=150&mnr=724.
[32] Reykjavík University. Analysis and Design of Software T-216-GHOH. https://www.ru.is/media/vfd/Greining-og-honnun-hugbunadar.pdf.

raised in a course about software engineering, citing an example pertaining to diverse hiring practices in the field to counter biases against neurodiverse and disabled people. In contrast, in an email the chair of the faculty of electrical and computer engineering at the University of Iceland could only say in reference to the courses personally taught, that they do not cover disability, inclusion or accessibility.

There are some courses available on Artificial Intelligence at the University of Iceland. However, to our knowledge these do not include a focus on disability. The Centre for Analysis and Design of Intelligent Agents at the University of Reykjavík,[33] where the Language and Voice Lab is located, includes a disability focus (see Section 2.2). To our knowledge, other aspects of their work do not include a disability focus.

4.3 How digital inclusion and accessibility is addressed in the education and training of accessibility and inclusion professionals

We have no information for Iceland beyond what was stated in Section 4.2 of this report.

4.4 How digital inclusion is addressed via the training of people with disabilities

One way that some disabled people can improve their knowledge in this area is through Fjölmennt, an adult education centre for people with intellectual disabilities/learning difficulties.[34] Fjölmennt offers a wide range of courses, including some on digital technologies. These courses are not framed in terms of 'digitalisation' or 'digital transformation,' but offer practical courses such as learning about social media, using smart phones and apps, connectivity between computers and mobile devices, learning about new technologies and selecting the most suitable devices on the part of users.

There is also Tölvumiðstöð (TMF), an independent institution which offers counselling, education and courses in the field of information technology.[35] The courses are offered in physical classrooms or online. TMF has formal links with a number of DPOs in Iceland[36] and offers the ability to tailor courses to suit the specific needs of various groups.

[33] The Centre for Analysis and Design of Intelligent Agents, University of Reykjavík. http://ailab.ru.is/index.html.
[34] Fjölmennt adult education centre. https://www.fjolmennt.is/is/english.
[35] TMF. http://www.tmf.is/.
[36] TMF. The organisations include DPOs such as: Blindrafélagið, Styrktarfélag lamaðra og fatlaðra, landssamtökin Þroskahjálp og Öryrkjabandalag Íslands.

5 The opportunities and challenges presented by digitalisation and digital transformation to the rights of persons with disabilities

5.1 The most significant opportunities presented by digitalisation and digital transformation for persons with disabilities

Some DPOs have been following developments in the field of digitalisation closely. One example is Þroskahjálp – Iceland's National Association of People with Intellectual Disabilities. Þroskahjálp wrote an extensive commentary upon the Icelandic government's strategy on artificial intelligence (*Stefna Íslands um gervigreind*) published by the Prime Minister's Office (Forsætisráðuneytið) in the spring of 2021. This commentary[37] detailed both the concerns about the effects of this policy for disabled people, but also some of the possible benefits and opportunities. Þroskahjálp raised a number of opportunities such as through the potential of AI to diagnose and treat disease, increase access to healthcare, as well as how developments in this field could build bridges between academia, the technology sector but also human rights organisations. Þroskahjálp highlights the enormous potential for benefits if this AI policy incorporates a strong human rights perspective.

According to one of our contacts, Þroskahjálp is currently working on their own strategy on digital accessibility, as numerous possibilities for inclusion and accessibility are seen as a key aspect of digital transformations. Some examples given to us were the utility of digital assistants in finding information; voice activated assistants to help with tasks around the home, such as adjusting heating and lighting; voice-activated typing for people with limited mobility or other difficulties writing; e- and telehealth for those who find visiting doctors in person difficult; and facial recognition for authentication when other means prove difficult for users.

5.2 The most significant challenges faced by persons with disabilities in relation to digitalisation and digital transformation

One DPO in Iceland that has closely been following digital developments is Þroskahjálp – Iceland's National Association of People with Intellectual Disabilities. They are currently working on their own digital strategy. However, in their recent response[38] to the Icelandic government's strategy on artificial intelligence[39] a number of concerns were raised and some of which also speak to broader issues than AI specifically. Þroskahjálp cites the effects of such technology in the area of employment, noting that disabled people are already marginalised in the labour market and that AI could increase this marginalisation further. One example given is the use of AI to sort applications which could exclude applicants with known impairments. Another concern is the increased automation of the labour market which could also exclude disabled

[37] Þroskahjálp. 2021. "Umsögn Landssamtakanna Þroskahjálpar um stefnu um gervigreind, 15. mars 2021" (Þroskahjálp's opinion on the policy on artificial intelligence). https://www.throskahjalp.is/static/files/umsogn-landssamtakanna-throskahjalpar-um-stefnu-um-gervigreind.pdf.

[38] Þroskahjálp. 2021. "Umsögn Landssamtakanna Þroskahjálpar um stefnu um gervigreind, 15. mars 2021" (Þroskahjálp's opinion on the policy on artificial intelligence). https://www.throskahjalp.is/static/files/umsogn-landssamtakanna-throskahjalpar-um-stefnu-um-gervigreind.pdf.

[39] Prime Minister's Office (Forsætisráðuneytið). 2021. Stefna Íslands um gervigreind (Iceland's policy on artificial intelligence). https://www.stjornarradid.is/library/01--Frettatengt---myndir-og-skrar/FOR/Fylgiskjol-i-frett/08.04.21_Stefna%20%C3%8Dslands%20um%20gervigreind_loka.pdf.

people further, especially those with intellectual or developmental disabilities who rely upon employment in areas that are vulnerable to automation. Another area of concern noted by Þroskahjálp is that as digital technologies become omnipresent and interact with many areas of life, those with ID/IDD may be increasing susceptible to phishing schemes and identity fraud. Another area is the digital divide in terms of both the physical and financial access to this technology, but also knowledge about its use. They note (as discussed in Section 2.1 of this report) that the government of Iceland's digital strategy, Stafrænt Ísland, or 'Digital Iceland,'[40] is focused on the general public and lacks a disability perspective. Þroskahjálp notes that the existence of such strategies and legislation around digitalisation is not enough and that DPOs and activists need to continually need to educate themselves and become directly involved in these developments. The final area of concerns raised in this report is about data collection and privacy. Þroskahjálp notes that the free circulation of information via digital means has significant positive implications in a wide range of areas, but it also poses numerous risks particularly in a small society like Iceland. They note, for example, how circulating information about disability status of individuals in one area, such as social media or court cases, could negatively influence other areas such job opportunities and housing.

[40] Stafrænt Ísland (Digital Iceland). https://island.is/stafraent-island.

6 Conclusions and recommendations

6.1 Conclusions

The Icelandic national level disability strategy only briefly refers to matters pertaining to digital transformations. When digital or IT matters are raised, they are limited exclusively to web accessibility pertaining to public websites and demonstrates a lack of knowledge of the broader implications of digitalisation. Specific legislation, such as at EU level, which is nevertheless still influential in Iceland, could have an important impact in broadening the understanding of what digitalisation means in general and for disabled people in specific on the part of policymakers.

Some generic national level digital strategies are either outdated or primarily focused on web accessibility, such as the 2012 web accessibility strategy (*Aðgengisstefna fyrir opinbera vefi*).[41] Such strategies do not address the broader implications of digitalisation.

Sector specific strategies are uneven in this area – some explore the impact of digitalisation in their areas but ignore disability related matters of accessibility, such as the national policy for the Icelandic health services to 2030,[42] even though the implications of digitalisation on healthcare is a key concern for disabled people. Other sector specific strategies – such as the 2018-2022 strategy on language technology in support of the Icelandic language,[43] - have embraced accessibility as an important goal of the strategy and have employed partners that work with DPOs to realise these goals.

Some of the more significant work that is being done in Iceland in this area occurs at the level of the municipalities, some of which have devised their own digital strategies, or else made digitalisation a core component of a larger plan and which places an emphasis upon diversity and accessibility. Primary attention to national level plans or strategies overlooks the work being done with the municipalities.

6.2 Recommendations

- The significance of digitalisation and digital transformations is generally recognised by the Icelandic government. However, in regard to issues of accessibility and inclusion in the context of disability the key emphasis appears to be ‘web accessibility,’ or more specifically accessibility pertaining to public websites. The broader implications of digitalisation need to be included in national strategies and practices pertaining to disability inclusion.

- Disability strategies in Iceland overlook issues of digitalisation, whereas sector specific digital strategies overlook disability inclusion. Future national and municipal disability strategies need to include a more comprehensive and

[41] Government of Iceland. 2012. Aðgengisstefna fyrir opinbera vefi. https://www.stjornarradid.is/verkefni/stafraent-island/opinberir-vefir/adgengisstefna/.

[42] Government of Iceland. 2019. Heilbrigðisstefna Stefna fyrir íslenska heilbrigðisþjónustu til ársins 2030. https://www.stjornarradid.is/library/04-Raduneytin/Heilbrigdisraduneytid/ymsar-skrar/Heilbrigdisstefna_4.juli.pdf.

[43] Mennta- og menningarmálaráðuneytið. 2017. *Máltækni fyrir íslensku 2018-2022*. https://www.stjornarradid.is/library/03-Verkefni/Menningarmal/M%C3%A1lt%C3%A6kni%C3%A1%C3%A6tlun.pdf.

informed vision of digitalisation and sector specific strategies need to include a disability perspective.

- The work being done at the City of Reykjavík, such as through the Green Plan, on digitalisation and disability inclusion is an example of good practice. However, it is unclear if this work will inform other municipalities around the country. There are some signs that other municipalities are producing their own digital strategies, though the attention to disability inclusion in the Reykjavík plan is something other municipalities could emulate.

- Specific digital initiatives at the level of the municipality are not enough to ensure that all disabled people in the country benefit from digitalisation and that digital gaps will not widen. National level leadership in this area is required, and a task force between national level Ministries, municipalities, industry stakeholders, DPOs and users could help to address these issues.

- While there are some positive examples to be found, it would appear that training in disability inclusion in various relevant fields is uneven or else an afterthought. Enhanced training in digital accessibility and inclusion should be a cornerstone of education and training in these fields to ensure that new technologies and services are designed inclusively, as opposed to patchwork of efforts after the fact.

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