Digitalisation and digital transformation in Hungary

Implications for persons with disabilities

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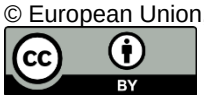

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1 Executive summary

The National Digitalization Strategy was presented in June 2020 to help position the Hungarian ICT industry for the best use of resources during the 2021-2027 European Union funding period. The Strategy is based on four pillars: digital infrastructure, digital skills, digital economy and digital state. The Strategy does not contain detailed information on financing. However, its primary objective is to allocate the resources available in the European Regional Development Fund between 2021 and 2027. The Strategy does not address the impact of digitalisation on persons with disabilities, beyond three very general sentences. There are no specific requirements regarding accessibility in line with the EU Funds.

The Digital Success Program 2.0 was published in 2017 to harmonize the various sectoral digitalisation strategies. Persons with disabilities are not mentioned in the document. There are no strategies concerning digitalisation in key fields such as in the context of teleworking, political participation and online voting.

The Digital Workforce Program contains short- and medium-term solutions to mitigate the lack of IT specialists and digitally educated workers in general. Regarding persons with disabilities, equal opportunities or accessibility, these issues are not mentioned in the document.

The Digital Education Strategy[1] (DES), published in 2017, has a horizontal pillar dedicated to 'Accessibility for persons with disabilities in education and training". The strategy defines goals and tools to create equal opportunities for students with disabilities by guaranteeing equal access. It identifies two main areas of accessibility: accessibility to physical elements (e.g. hardware) and the operability of digital services and software.[2]

The National Disability Programme (2015-2025) was passed by Parliament Decision No. 15/2015. It contains only one direct reference to digitalisation and digital transformation, which relates to accessibility of internet services. As an indirect reference, the Programme refers to the importance of atypical forms of employment, such as telework.

The Implementation Plan (2020-2022) of the National Disability Programme was passed by Government Decision No. 1187/2020. The Implementation Plan lacks any direct reference to digitalisation. So, the National Disability Strategy and its Implementation Plan for the period between 2020 and 2022 does not address at all digitalisation and digital transformation. Accessibility of public websites is the only exception, which is mentioned at least in these documents.

In many sectors, there are no sector specific strategies at all, or they are simply not public or finalized yet. Even if there is a sector specific strategy, it does not address the issue of digitalisation in the context of the rights of persons with disabilities.

Accessibility and reasonable accommodation may be strengthened by the new digital forms of work, such as telework and home office. Before the COVID-19 pandemic,

[1] In English: https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.
[2] Digital Education Strategy of Hungary, 2016, p. 144. https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.

these forms of work used to be marginal, in part due to the hostile attitude of employers, as most of the employers often refused requests of employees to work from home at least on some days of the week. This attitude has been rapidly changing in 2020-2021, so telework and home office may contribute to the higher labour market participation of persons with disabilities due to their mostly accessible tele systems.

In the field of health care and social security, there are several challenges, such as digitalized health services and social security payments.

As for education, the COVID-19 pandemic tested the education system's digital preparedness with months of distance education. Accessibility is still not universal in education, since a significant share of special education needs (SEN) students could not join in online education. Another potential area of development is teacher's digital training: although there are several platforms and applications, their usage is not widespread. Despite the shortcomings, distance education is a viable way to educate SEN students, if a well-prepared teaching staff and the use of specific applications and platforms are in place. The elimination of the need for transportation can be a big step towards inclusion.

Good practices

Education: Without basic level digital competencies an active labour force participation is not viable in 2021. Therefore, Hungary's Digital Education Strategy[3] set a goal to provide free basic digital training for every citizen at the place where they live. The EU funded governmental program 'Decreasing the digital gap' is one action that helps to reach this goal. The program, that has already reached around 150 thousand people, targets people with disabilities among several disadvantaged groups.

Recommendations

- Mainstreaming should be used in national strategies to address the rights and interests of persons with disabilities.
- The National Disability Programme should have much more regard/focus on digitalisation and digital transformation.
- The development of (still not existing) EU level regulation of telework and home office may incentivise national level regulation.
- Wider use of telework and home office may increase employment of persons with disabilities, provided it is accessible.
- Collecting and disseminating best practices at EU level may promote effective national level measures.
- Regulation or financial incentives should be used to motivate telecommunication service providers and other participants of the digital sector to provide high-quality accessible services to people with disabilities.
- The needs and challenges of people with disabilities should be further highlighted in the education of digital, accessibility, and inclusion professionals.

[3] In English: https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.

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 Draft of the new **National Digitalization Strategy** was presented by the responsible Ministry of Innovation and Technology in June 2020, online. According to the Hungarian Government, the Strategy will help position the Hungarian ICT industry for the best use of resources during the 2021-2027 European Union funding period. The National Digitalization Strategy (2021-2030) replaces the expiring National Infocommunications Strategy (2014-2020).[4]

The Ministry of Innovation and Technology invited the opinions from social partners, NGOs and citizens by email before 13 July 2020.[5] Unfortunately, there is no information at all regarding the opinions and their impact on the text. Thus, there is no evidence of the involvement of persons with disabilities in the development and implementation of the strategy. Unfortunately, the final version of the National Digitalization Strategy is still not available, only the version for consultation.[6]

The Strategy is based on **four pillars**: digital infrastructure, digital skills, digital economy and digital state. The following four (key) targets have been set:

1. 95 % of all households shall have access to connection with gigabites.
2. 98 % of people between 16-74 shall regularly use internet.
3. Over 30 % of companies shall be integrated (digitalized), using ERP software.
4. Over 90 % of e-government applications (electronic public procedures) shall be submitted through the internet. However, there is no information on the implementation of this target.

The above-mentioned targets may be achieved through investment in the following **fields and activities**:

- gigabyte capable networks;
- digital infrastructure of education;
- small and medium enterprises;
- research networks;
- state institutions (HPC capacity);
- 5G networks;
- digital competence development of citizens;
- increase the number of IT experts and engineers;
- digital startup ventures;
- ICT industry development;
- digital state, public administration at all levels;
- accessible public services;
- smart cities;
- e-health services.

[4] On the National Infocommunications Strategy in English: https://ec.europa.eu/digital-single-market/en/country-information-hungary.
[5] https://erke.hu/2020/07/08/nemzeti-digitalis-strategia-szoljon-hozza/.
[6] In Hungarian: https://2015-2019.kormany.hu/download/f/58/d1000/NDS.pdf.

The Strategy does not contain detailed information on **funding and financing**. However, its primary objective is to allocate the resources available in the European Regional Development Fund between 2021 and 2027.

The Strategy directly addresses the **impact of digitalisation** and digital transformation on persons with disabilities only in one sentence (Chapter 2.3.2.4 on page 22):

> *"Equal opportunities*
> *The spreading of digitalization promotes digital equal opportunities of those living in isolation, with social disadvantages, living with disabilities, therefore, improves quality of life by overcoming difficulties deriving from physical mobility and geographical distances."*

The Strategy also mentions accessibility in general in two sentences. On page 11 and 121, concerning the Digital state the same idea is mentioned: in public administration digital technologies shall promote accessible and client-oriented services. In my view, these are very general ideas, so the Strategy does not really address the impact of digitalisation and digital transformation on persons with disabilities.

I must also mention another document, called **Digital Success Program 2.0** (Digitális Jólét program 2.0), which was published in July 2017.[7] This document is quite vague, however, the official objective is to harmonize the various digitalisation strategies and identify tasks for 2017-2018. The website of the program contains the following summary:

> *"The Digital Success Programme intends to contribute to Hungary's preparation for the digital transformation in new areas in the coming years. After broad consultations with the professional community and the general public, in the summer of 2017 the Government of Hungary decided to extend the Digital Success Programme and to adopt the Digital Success Programme 2.0., which is a strategy for gaining digital advantage, as its digitalisation-supporting programmes cover almost every field of the digital development of the Hungarian economy, the operation of the state, and the Hungarian society. Digitalisation is the largest economic development programme of the coming decade, and one of the most important means to achieve success and growth. DJP2.0 sets out 89 actions in 26 thematic areas along five pillars."*[8]

Regarding persons with **disabilities**, this issue is not mentioned in the document.

As for the Public Sector Web Accessibility Directive and the European Accessibility Act, **Act 75 of 2018 on accessibility of websites and mobile applications in the public sector** contains the legal obligations in this regard.[9]

7 In Hungarian: https://digitalisjoletprogram.hu/files/58/f4/58f45e44c4ebd9e53f82f56d5f44c824.pdf.
8 https://digitalisjoletprogram.hu/en/about.
9 In Hungarian: https://net.jogtar.hu/jogszabaly?docid=A1800075.TV&searchUrl=/gyorskereso.

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

In the framework of the Digital Success Program 2.0, **several sector-specific strategies** were announced in 2016,[10] such as the Digital Startup Strategy[11] Digital Export Development Strategy[12] **and the** Digital Child Protection Strategy.[13] However, there are no strategies concerning digitalisation and digital transformation in key fields such as in the context of teleworking, health care, political participation and online voting.

Among these strategies, the government published the **Digital Education Strategy** (DES) in June 2016.[14] One of the horizontal pillars of the Digital Education Strategy is 'Accessibility for persons with disabilities in education and training'. The strategy defines goals and tools to create equal opportunities for students with disabilities by guaranteeing equal access. It identifies two main areas of accessibility: accessibility to physical elements (p.s. hardware) and the operability of digital services and software.[15]

The **strategic goals of the Digital Education Strategy** are the following:

1. "The websites of education institutions as well as the infocommunications platforms available to students and parents should be made accessible at the WCAG 2.0 AA level.
2. A central organisation should be established for the purposes of checking and guaranteeing the accessibility of infocommunications platforms and providing help in barrier-free access arrangements.
3. Special hardware and software tools used by students with disabilities should be made accessible.
4. Detailed instructions of use should be provided for hardware and software to students with disabilities as well as the teachers and IT specialists of the education institutions. The use of these tools must be integrated into the special education needs (SEN) programmes.
5. It would be necessary to develop a learning material which can be indirectly or directly used by the students concerned, teachers, parents, university students, and instructors and which sensitises them to the main groups of persons with disabilities."[16]

The strategy articulates the need for SEN (special education needs) students to gain access to electronic services and digital learning materials. It states that SEN students should be able to use digital devices in education institutions and have teachers who are prepared to use these devices.

[10] https://stip.oecd.org/stip/policy-initiatives/2019%2Fdata%2FpolicyInitiatives%2F15076.
[11] https://digitalisjoletprogram.hu/files/e0/18/e018d60ec4852af91a3714b7196a7a61.pdf.
[12] https://digitalisjoletprogram.hu/files/47/6d/476d337cddb48679dff08bd81ed3d8a8.pdf.
[13] https://digitalisjoletprogram.hu/files/14/83/148325e68115854fb4a8ec52c84ececf.pdf.
[14] In English: https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.
[15] Digital Education Strategy of Hungary, 2016, p. 144. https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.
[16] Digital Education Strategy of Hungary, 2016, p. 145. https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.

In the framework of the Digital Success Program 2.0, the **Digital Workforce Programme** (2016)[17] contains short- and medium term solutions to mitigate the lack of IT specialists and digitally educated workers in general. Regarding persons with disabilities, equal opportunities or accessibility, these issues are not mentioned in the document. I can summarize again, that the document does not have any connection with the rights or interests of persons with disabilities.

At national level, the existing strategies do not address the rights and interests of persons with disabilities in the context of digitalisation and digital transformation. Moreover, sector specific strategies mostly do not address the issue of digitalisation and digital transformation. Therefore, mainstreaming should be used in national strategies to address the rights and interests of persons with disabilities. Mainstreaming could ensure, that strategies on digitalisation shall have a regard to disability and promote measures in this respect.

[17] In Hungarian: https://digitalisjoletprogram.hu/hu/tartalom/dmp-digitalis-munkaero-program.

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

The **National Disability Programme** (2015-2025) was passed by Parliament Decision No. 15/2015.[18] The Programme contains only one direct reference to digitalisation and digital transformation (under Chapter 12 on Accessibility), which relates to accessibility of internet services:

> "As a consequence of spreading digital literacy, accessibility of electronic and internet services is gaining more and more importance. Thus, it is a strategic goal, taking into account the current international and national laws, standards, to ensure electronic accessibility of information, communication, public and private services. Therefore, organisations providing public services must be prepared for ensuring such accessibility of webpages."

As an indirect reference, the Programme refers to the importance of atypical forms of employment, such as telework. Moreover, special devices must also be provided, which may promote access to employment (see Chapter 4 on Employment).

The **Implementation Plan** (**2020-2022)** of the National Disability Programme was passed by Government Decision No. 1187/2020.[19] The organisations of persons with disabilities must be continuously consulted with in the course of elaborating the Implementation Plan.[20] The Minister of Human Capacities is responsible for coordinating the implementation of the Programme, in accordance with the Implementation Plan.[21]

The Implementation Plan lacks any direct reference to digitalisation. There are only two tasks, which are connected to the use of internet:

> "4.7 National internet database shall be established to promote connections between workers with disabilities and potential employers, which is integrated with other public job search websites."

> "12.5 Access to public websites and mobile applications of persons with disabilities must be ensured (implementation of Act 75 of 2018 on accessibility of websites and mobile applications in the public sector)."

We may conclude, that the National Disability Strategy and its Implementation Plan for the period between 2020 and 2022 **does not mention digitalisation** and digital transformation. Accessibility of public websites is the only exception, which is mentioned at least in these documents. The National Disability Programme should have much more regard to the issue of digitalisation and digital transformation. The

[18] In Hungarian: https://njt.hu/jogszabaly/2015-15-30-41.2.
[19] In Hungarian: https://njt.hu/jogszabaly/2020-1187-30-22.1.
[20] This obligation is prescribed by the National Disability Programme in its last Chapter on Implementation.
[21] Implementation Plan Point 1.b.

digitalisation measures in the framework of the National Disability Programme should expand over accessibility of websites.

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

The experts have not found up to date national level (or other) strategies at all in several fields, such as transport, access to goods and services. The situation is similar in employment and health care.

As for **employment**, there is no separate national strategy. The National Reform Programme 2020[22] is the only Hungarian national level strategy addressing employment. It has two pages on employment, however, it does not mention digitalisation and/or persons with disabilities.

In the field of **health care**, the Government passed the National Health Care Program in 2018,[23] however, the text of the program is not publicly available, and the request of an NGO for the text of the Program was refused by the Ministry responsible for health care (presently Ministry of Human Resources).[24] So, this seems to be a governmental program, which is not available for the public. According to some news, the Government has developed another new strategy in March 2021:[25] 'Healthy Hungary 2021-2027'. Unfortunately, this program is not available at all (yet).

Regarding **poverty and Roma policy**, the Government has published the draft of the 'Hungarian National Social Development Strategy 2030', which is under debate in March 2021.[26] The Draft Strategy refers to the challenges of digitalisation and the importance of digital competences in the field of work.[27] However, the Draft does not address the rights and situation of persons with disabilities.

The **deinstitutionalisation strategy** (2011-2041) is contained in Government Decision No. 1257/2011.[28] The strategy does not address the issue of digitalisation.

[22] In English: https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-hungary_en.pdf.
[23] Government Decision No. 1722/2018: https://www.hbcs.hu/uploads/jogszabaly/2820/fajlok/1722_2018_XII_18_Korm_hatarozat.pdf.
[24] https://kimittud.atlatszo.hu/request/nemzeti_egeszsegugyi_programok.
[25] https://hirlevel.egov.hu/2021/03/22/egeszseges-magyarorszag-2021-2027-elkeszult-a-kovetkezo-het-evre-szolo-agazati-strategia/; https://www.napi.hu/magyar_gazdasag/egeszsegugy-agazati-strategia-fejlesztes-unios-forras.725304.html; https://www.vg.hu/kozelet/egeszsegugy-kozelet/egeszsegugy-elkeszult-a-kovetkezo-idoszak-agazati-strategiaja-3622096/.
[26] In Hungarian: http://romagov.hu/wp-content/uploads/2020/12/MNTFS2030_1201-tervezet.pdf.
[27] Only one paragraph (general statement) on page 18.
[28] In Hungarian: https://docplayer.hu/2864-A-kormany-1257-2011-vii-21-korm-h-a-t-a-r-o-z-a-t-a.html.

4 Promoting disability inclusion through funding, education and training

4.1 How funding promotes disability-inclusive digitalisation and digital transformation

The Digital Success Programme,[29] aims to reduce the barriers to internet access. One of the program's pillars - called **'Digital access'** - **focuses on accessibility costs reduction**. As people with disabilities in Hungary tend to be poorer than the average,[30] the measures positively affect them.

The Digital access pillar consists of **three actions**:

1. Digital tax reduction:[31] The VAT on internet subscription has been reduced from 27 % to 5 % from 1 January 2018

2. Digital Success Basic Package:[32] The construction offers a package that is 15 % cheaper than the best-priced internet subscription offer on the market for those who do not have a subscription

3. Digital Success Wifi:[33] The action aims to bring free Wifi to all Hungarian settlements, in at least one public institution and one public area.

There are no measures that address explicitly persons with disabilities. The lack of financial incentives on telecommunications service providers and other market participants in the digital sphere has an apparent negative effect. There are numerous examples[34] of the **lack of services** that would be technically viable as:

- too complicated wording for people with mental disabilities;
- no accessible complaint handling documents for blind people;
- no sufficient instructions for deaf people;
- the webpage of major telecommunication companies is not sufficiently accessible.

The shortcomings of these services are not just signalling the lack of financial incentives but paints a picture of the further need for the development of inclusive culture in Hungary.

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

The extent and depth of disability inclusion topics in the training of digital professionals vary significantly across **universities** in Hungary. There is no uniform knowledge block/seminar on disability and accessibility matters. The presence of the topic in the

29 https://digitalisjoletprogram.hu/en/about.
30 Hungarian Central Statistical Office (2015) http://www.ksh.hu/docs/hun/xftp/idoszaki/nepsz2011/nepsz_17_2011.pdf.
31 https://digitalisjoletprogram.hu/en/content/digital-tax-reduction.
32 https://digitalisjoletprogram.hu/en/content/dsbp-digital-success-basic-package.
33 https://digitalisjoletprogram.hu/en/content/digital-success-wifi.
34 Csemáné Dr. Váradi Erika: FOGYATÉKOSSÁG ÉS AZ INFORMÁCIÓS TÁRSADALOM – JOGI ASPEKTUSOK. MultiScience - XXXIII. microCAD International Multidisciplinary Scientific Conference University of Miskolc, 23-24 May 2019.

curriculum is determined mainly by the professors' attitudes and the connections with market participants with a focus on disability inclusion.

The head of Hungary's most prominent **IT training faculty reported**[35] no relevant seminars on disability inclusion topics, future digital professionals only touch on the issue on seminars of web development. The faculty also has a recognized research lab on artificial speech, and students can delve into the topic of disability inclusion in their individual lab work.

Another curriculum from a **west-Hungarian university's IT faculty**[36] includes multiple topics on disability and accessibility, such as:

- On BA level: a course on 'User interface design' with a dominant focus on the needs of people with disabilities, the theory and practice of WEB-accessibility design.
- On MA level: a course called ‘Software ergonomics’ also includes topics on web accessibility.
- The faculty has a lab[37] with various research areas connecting to disability inclusion, such as:
  - the development of software increasing the quality of life of people with disabilities
  - the development and usage of virtual reality and augmented reality devices in the rehabilitation of people with disabilities (e.g. 'serious games')
  - the theory and practice of ‘Design for all’ (web-accessibility)

Another **university from eastern Hungary**[38] has a web-design curriculum that includes web accessibility topics for all IT professionals. The institution trains IT teachers who learn about the aspects of disability inclusion in the course ‘Information technologies.’ The IT faculty also has connections with multiple companies that work on the digital inclusion of people with disabilities and offer trainee positions for IT students.

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

Graduates of social work and social policy majors tend to work in fields concerning the inclusion of people with disabilities and accessibility. The curriculum varies in different higher education institutions, however, the attitude of the teaching staff drives the depth of the content.[39]

[35] Based on a personal interview with Dr. László Szirmay-Kalos, Department of Control Engineering and Information Technology, Budapest University Of Technology And Economics, 2021.
[36] Based on a personal interview with Dr. Cecília Sikné Lányi, Faculty of Information Technology Department Of Electrical Engineering and Information Systems, University of Pannonia, 2021.
[37] https://mik.uni-pannon.hu/index.php/hu/k-f-i/kutatolaboratoriumok/virtualis-kornyezetek-es-alkalmazott-multimedia-kutatolaboratorium.html.
[38] Based on a personal interview with Dr. Róbert Mingesz, Institute of Informatics, University of Szeged, 2021.
[39] Based on personal interviews with Zoltán Háberman (Department of Social Work) and István Sziklai (Department of Social Policy) from Eötvös Loránd University, Márta Bogárné dr. Erdős (Department of Social Studies) from University of Pécs, and dr. Katalin Szoboszlai (Department of Social Work) from University of Debrecen.

In Hungary's **biggest BA-level social work degree programme**,[40] students get a basic understanding of the questions of digital inclusion and accessibility through various courses. They learn about digital accessibility in a broader context of accessibility and learn about digital devices connected to courses dedicated to rehabilitation, psychosocial disability, and elderly care.

The **social policy MA programme**[41] from the same university offers a course on disability policy. The curriculum involves topics on digitalisation. The most dominant parts are accessibility - connected to different areas like education, health care, employment, and social services - and universal design.

The University of Debrecen can be mentioned as another example where there is no content in the future social worker's curriculum connecting to the digital inclusion of people with disabilities.[42]

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

The **improvement of digital skills** of people with disabilities through training is treated as a priority both on the civil and the governmental side.

The National Federation of Organisations of People with a Physical Disability (MEOSZ) proposed[43] that the Digital Success Program 2016 shall envisage **free digital training for adults** with disabilities. They highlighted the importance of digital competencies in the labor market and suggested that the training involves:

- basic knowledge of internet use;
- emailing;
- operation of basic MS Office programs.

The **Digital Education Strategy** of the Digital Success Program 2016 states that “all Hungarian citizens will have an opportunity to take part in basic digital training for free at the place where they live (or no more than 30 kilometres from there).[44]” The commitment of the Digital Education Strategy to provide an opportunity for all Hungarian citizens to take part in basic digital training outperforms, what MEOSZ asked for. As for the results, at least 150 000 adults lived with the opportunity through trainings of the program ‘Decreasing the Digital Gap’. People with disabilities were targeted in this program, but there is not data on their exact share whithin the 150.000 participants.

‘Decreasing the digital gap’ (GINOP 6.1.2.-15) is a priority government project funded by the EU that was launched in 2016 to decrease the digital gap of the

[40] Based on a personal interview with Zoltán Háberman, Department of Social Work, Institute of Social Studies, Faculty of Social Sciences, Eötvös Loránd University, Budapest, 2021.
[41] Based on a personal interview with István Sziklai, Department of Social Policy, Institute of Social Studies, Faculty of Social Sciences, Eötvös Loránd University, Budapest, 2021.
[42] Based on a personal interview with Dr. Katalin Szoboszlai, Department of Social Work, Faculty of Health, University of Debrecen, Budapest, 2021.
[43] MEOSZ (2016): Javaslat a mozgássérült emberek digitalis jólétének megteremtéséhez http://www.meosz.hu/wp-content/uploads/2016/09/DigitalisJolet_MEOSZjavaslat_0601.pdf.
[44] Digital Education Strategy of Hungary, 2016, p.6. https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.

population.[45] The program, which mainly focuses on disadvantaged people, lists people with disabilities as one target group. The project involves different courses such as 'First steps in the digital world' and 'I use my digital device independently'.[46] The program aimed to involve a total of 260 thousand people in digital training, and by 2019 it reached almost 150 000.[47]

Another **training opportunity aiming at people with disabilities** was realized with the joined effort of the civil and business sector **in 2020 called 'Incorpora'**. The leaders of the project were Microsoft Hungary and the Hungarian Charity Service of the Order of Malta.[48] The goal was to help people find jobs by using customized digital training and mentoring. The curriculum included:

- organising and leading Teams meetings;
- file management;
- online group work with cloud applications.

[45] https://eacea.ec.europa.eu/national-policies/eurydice/content/validation-non-formal-and-informal-learning-34_es.
[46] https://budapest.katedra.hu/informatika.
[47] https://ec.europa.eu/info/sites/default/files/2019-european-semester-national-reform-programme-hungary-annex_hu.pdf.
[48] https://www.profession.hu/cikk/ingyenes-informatikai-kepzesek-allaskeresoknek.

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

The National Federation of Organisations of People with a Physical Disability (in short: MEOSZ) is the largest organisation representing people with physical disabilities in Hungary. MEOSZ sent electronically the following proposals regarding persons with disabilities to the Digital Success Program in 2016:[49]

- Provide free internet access for the 160 000 members of MEOSZ.
- Support the purchase of computers and digital devices for persons with disabilities.
- Support the purchase of special digital technologies for persons with disabilities.
- Improve digital competences of persons with disabilities.

Before the COVID-19 pandemic, these forms of work used to be marginal (3,7 % teleworkers in 2018),[50] in my opinion in part due to the hostile attitude of employers. This attitude has been rapidly changing in 2020-2021, so telework and home office may contribute to the higher labour market participation of persons with disabilities. There are, for instance, more and more workers with disabilities in call centres.[51] New, digital forms of employment could be promoted by public counselling services, which would prepare the parties for the challenges and mediate between potential workers and employers.[52]

In respect of work opportunities, the most relevant problem is the lack of accessibility. Thus, it is often impossible to get to many workplaces, as public transport is often not accessible. Furthermore, reasonable accommodation measures of employers are not supported.[53] Accessibility and reasonable accommodation may be strengthened by the new digital forms of work, such as telework and home office.

In education, there are several ways how the use of digital devices can positively affect special education needs (SEN) students. First, IT devices can offer a more personalized learning experience: digital applications and platforms can motivate students, give them immediate feedback on their performance, give them space for independence, and grant them the responsibility to correct their mistakes.[54] More specifically, in the case of sensory disability, digital devices can replace the defective sensory organ, expanding its detection range, thus broadening students' opportunities to acquire knowledge.[55] In some cases, IT can serve as a platform for movement

[49] http://www.meosz.hu/wp-content/uploads/2016/09/DigitalisJolet_MEOZZjavaslat_0601.pdf.
[50] https://www.ksh.hu/docs/hun/xftp/idoszaki/munkerohelyz/tavmunka/index.html.
[51] See for instance: https://unitedcallcenters.hu/united-call-centers-fogyatekossag-barat-munkahely/.
[52] Szellő, J. and Cseh, J.: Az atipikus foglalkoztatás növelésének lehetőségei a fogyatékos és megváltozott munkaképességű személyek körében. *Munkaügyi Szemle,* 2018/6, https://drive.google.com/file/d/1YuWspADsqEGewOgo5frBhnek9gW1mVFA/view, p. 39.
[53] https://www.vg.hu/gazdasag/jovedelemkorlat-foglalkoztatas-ellen-hat-2-676661/.
[54] Bíró, Kinga (2017): Korszerű IKT eszközök alkalmazása az SNI- s tanulók fejlesztésében. Opus et Educatio, Vol. 4. No. 3. http://opuseteducatio.hu/index.php/opusHU/article/view/211/347.
[55] Koplányi, E. (2015.). Digitális pedagógia támogatása–módszerek, eszközök, infrastruktúra (TÁMOP3.1.1 és TIOP 1.1.1),

development or rehabilitation in the form of 'serious games' with augmented or mixed reality devices.[56]

As persons with disabilities in Hungary tend to be poorer than the average,[57] digital technology can represent an essential opportunity for SEN (special education needs) students and adults with disabilities to participate in quality education and training in a relatively cost-effective way. To be able to live with this opportunity, access to digital devices and acquiring basic IT skills should be supported.

The COVID-19 pandemic showed that - despite the shortcomings - **distance education** is a viable way to educate SEN students if a well-prepared teaching staff and the use of specific applications and platforms[58] are in place. The elimination of the need for transportation can be a big step toward inclusion.

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

There is no evidence concerning the ‘digital divide’ in Hungary as it affects persons with disabilities.

As for the challenges presented by digitalisation and digital transformation to the rights of persons with disabilities in the field of work: there is no measure in employment policy, which would support the purchase of devices serving rehabilitation, for instance speaking computers, modern info-communication appliances.[59] There is a need for complex supportive measures in order to increase the share of digitalized workplaces for persons with disabilities.

Due to the COVID-19 pandemic, the whole Hungarian education system switched to digital learning for a while over the last year. It was a sad occasion to test the preparedness of the system that highlighted multiple shortcomings. However, see the existence of positive effects, mentioned in Section 5.1. Regarding SEN students, the following conclusions were the most dominant:

A considerable share of SEN students (about 8 %)[60] could not join in online education due to the lack of digital assets. Even in cases where digital access was provided, the lack of resources and preparedness on the teacher's side often put too much weight

https://conference.niif.hu/event/3/session/14/contribution/121/material/0/0.pdf.

56 Pannon Egyetem: Virtuális Környezetek és Alkalmazott Multimédia Kutatólaboratórium https://mik.uni-pannon.hu/index.php/hu/k-f-i/kutatolaboratoriumok/virtualis-kornyezetek-es-alkalmazott-multimedia-kutatolaboratorium.html.

57 Hungarian Central Statistical Office (2015) http://www.ksh.hu/docs/hun/xftp/idoszaki/nepsz2011/nepsz_17_2011.pdf.

58 Digitális Pedagógiai Módszertani Központ: Sajátos nevelési igényű (SNI) gyerekek, tanulók digitális munkarendje – módszertani ajánlások, https://dpmk.hu/2020/04/01/sajatos-nevelesi-igenyu-sni-gyerekek-tanulok-digitalis-munkarendje-modszertani-ajanlasok/.

59 https://www.feszt.eu/projektjeink/semmit-rolatok-nelkuletek/fogyatekos-emberek-foglalkoztatasa/.

60 According to a non-representative survey by Step by Step! public benefit association with 770 respondents from parents with SEN children.
Step by step! Association (2020), ’Survey on SEN students’ situation in digital education’, available at: https://lepjunkhogylephessenek.hu/2020/06/kerdoivunk-a-sajatos-nevelesi-igenyu-tanulok-helyzeterol-a-tavoktatasban/?fbclid=IwAR1Q5zYis9z291dU7d8v9OJbtodMq_F-shUSUexWKze8mj7methe%20accessibility%20of%20digitalsbrnxRBglKY.

on students' and their families' shoulders. Instead of digital contact lessons or group sessions, materials and tasks were regularly given out via email for individual learning. Parents viewed the lack of group work or any other opportunity to socialize with peers as one of the biggest problems connected to the digital education of SEN students. Professionals emphasized[61] the serious negative effects of the lack of development of movement skills.

In addition to all this, it should be stated that **advancing the digital competencies of SEN students** is a must. As the Digital Education Strategy of Hungary[62] states: the labour market changes generate needs for better-qualified employees. Therefore, up-to-date IT knowledge is essential for SEN students to have a quality job opportunity later in their lives.

In the field of **health care and social security**, there are several challenges, such as digitalized health services and social security payments (among others for persons with disabilities).[63]

[61] Step by step! Association (2020), 'Open letter on SEN students' education to Zoltán Maruzsa, state secretary for public education', available at: https://lepjunkhogylephessenek.hu/nyilt-level-az-sni-tanulok-oktatasarol/.

[62] Digital Education Strategy of Hungary, 2016, p. 143. https://digitalisjoletprogram.hu/files/d4/6b/d46bf17fdef3c9b5c1d38bd6db64c2a7.pdf.

[63] Homicskó, Á.: A digitalizáció az egészségbiztosításban In: *A digitalizáció hatása az egyes jogterületeken.* KRE, Budapest, 2020, https://ajk.kre.hu/images/doc6/PR/A_digitalizacio_hatasa_az_egyes_jogteruleteken.pdf, p. 99-116.

6 Conclusions and recommendations

6.1 Conclusions

There are several **strategies on digitalisation**, on sectoral specific issues and on disability. However, these strategies do not address the issue of access of persons with disabilities to the advantages of digitalisation. The National Digitalization Strategy was presented in June 2020 to help position the Hungarian ICT industry for the best use of resources during the 2021-2027 European Union funding period. The Strategy does not address the impact of digitalisation on persons with disabilities, beyond three very general sentences. The Digital Success Program 2.0 was published in 2017 to harmonize the various sectoral digitalisation strategies. Persons with disabilities are not mentioned in the document. There are no strategies concerning digitalisation in key fields such as in the context of teleworking, political participation and online voting. The Digital Workforce Program contains short- and medium-term solutions to mitigate the lack of IT specialists and digitally educated workers in general. Regarding persons with disabilities, equal opportunities or accessibility, these issues are not mentioned in the document.

The **National Disability Programme** (2015-2025) contains only one direct reference to digitalisation and digital transformation, which relates to accessibility of internet services. As an indirect reference, the Programme refers to the importance of atypical forms of employment, such as telework. The Implementation Plan (2020-2022) of the Programme lacks any direct reference to digitalisation. So, the National Disability Strategy and its Implementation Plan do not address at all digitalisation and digital transformation. Accessibility of public websites is the only exception, which is mentioned at least in these documents due to EU legislation.[64] In many sectors, there are no sector specific strategies at all, or they are simply not public or finalised yet. Even if there is a sector specific strategy, it **does not address the issue of digitalisation** in the context of the rights of persons with disabilities.

In education, digital accessibility and increasing digital competencies are a priority in strategies from general education to adult training. Different government actions target SEN students and people with disabilities with the main goal to make them able to join in the rapidly changing labour market. Despite the strategies and actions, there is still a substantial digital gap due to complex structural and socio-economic factors.

Most of the objectives focus on the education and training of students with disabilities and adults, but the need for their digital inclusion is not widely promoted in their environment. Digital, inclusion and accessibility professionals acquire some basic knowledge about the digital accessibility of people with disabilities throughout their education. Still, its depth varies widely among institutions (including zero knowledge in the spectrum).

[64] The text of the Programme specifically refers to the following EU document: COM(2010)636 – Communication. European Disability Strategy 2010-2020: A Renewed Commitment to a Barrier-Free Europe. However, no other EU law or document is mentioned in the text.

Funding incentives mainly focus on accessibility to the internet in accordance with EU legislation[65] and do not treat people with disabilities with special attention. The lack of financial incentives on telecommunications service providers and other market participants of the digital sector has an apparent adverse effect. There are numerous examples of the lack of services for people with disabilities that would be technically viable.

6.2 Recommendations

National level recommendations:

- The **existing strategies** do not address the rights and interests of persons with disabilities in the context of digitalisation and digital transformation. Moreover, many sector specific strategies do not address the issue of digitalisation and digital transformation. Therefore, **mainstreaming** should be used in national strategies to address the rights and interests of persons with disabilities. Mainstreaming could ensure, that strategies on digitalisation shall have a regard to disability and promote measures in this respect.

- The **National Disability Programme** should have much more regard/focus on digitalisation and digital transformation. The digitalisation measures in the framework of the National Disability Programme should expand beyond accessibility of websites.

- Wider use of **telework and home office** may increase employment of persons with disabilities. This could be promoted by better regulation of these forms of work in the Labour Code, and also by state support for this form of employment, and mitigating the barriers mentioned in Chapter 5.1.

- With means of regulation or financial incentives, telecommunication service providers and other participants of the digital sector should be motivated to **provide high-quality services to people with disabilities.**

- The needs and challenges of people with disabilities should be further highlighted in the education of digital, accessibility, and inclusion professionals. One way would be through the **sensitisation of the teaching staff** of relevant higher education institutions.

EU level recommendation:

- Collecting and disseminating **best practices** (e.g. in education and employment) may promote effective national level measures.

- The **EU level regulation** of telework and home office may incentivise national level regulation.

[65] However, there is no specific mention of requirements in EU Funds and Public procurement in the relevant Hungarian documents.

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