Digitalisation and digital transformation in Czechia

Implications for persons with disabilities

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1   Executive summary

The overarching national strategy for digital transformation is the 'Digital Czechia'. The Strategy is divided into three pillars with the aim of assuring consistency and continuity of already adopted documents at the EU and national level. Particularly relevant to disability is the second pillar 'Information Strategy of the Czech Republic' which sets out objectives for constructing public digital administration and information systems. The third pillar 'Digital Economy and Society' (DES) aims at ensuring the long-term competitiveness and overall prosperity of the Czech Republic with an emphasis on the readiness of the stakeholders, sectors and citizens to implement the transformation brought about by digitalisation, security and trust within the digital environment. Implementation of the Digital Czechia strategy is not funded by a particular funding body. The delivery of the activities relevant to the objectives formulated in the strategy is generally funded from the individual budgets of the respective ministries (the Ministry of the Interior and the Ministry of Industry and Trade in particular). The Government Agency for Information Society[1] is assigned to oversee implementation of the strategy but does not have the remit for managing and coordinating the funding schemes allocated to digital transformation. The primary instrument being used to implement the Strategy is Act 99 on the accessibility of websites and mobile applications and on the amendment of the Act 365 on public administration information systems. This particular law is the consequence of the transposition of the European Directive 2016/2102 on the accessibility of websites and mobile applications of public sector entities into the Czech legal order. Relevant to the European Electronic Communications Code is the electronic identification instrument intended to enable digital communication between the citizens and authorities and to provide access to online eGovernment services not only within the Czech Republic, but also in other EU member states.

The degree of disability inclusiveness of the specific strategies on digital transformation appears generally low. Universal Design approach is not considered as a guiding principal of digital developments and it is completely absent in almost all strategies. For example, a disability inclusion perspective is not taken into account in the Digital Education Strategy 2020 nor are measures which would address accessibility of digital learning technologies for pupils with disabilities. Similarly, there was no direct reference to implications of the transition to digital technologies for persons with disabilities in the Strategic Framework for Development of Health Care in Czechia 2030. In the Implementation Plan 2.3. only a passing reference is made to access to health care data, mobile healthcare (mHealth) and telemedicine technologies.

The National Plan for the Promotion of Equal Opportunities for Persons with Disabilities 2021–2025 addresses the potential or challenges of digitalisation and digital transformation only partially and indirectly. The Plan mentions assistive digital technologies in regard to participation of persons with disabilities in meetings. References relevant to the potential or challenges of digitalisation and digital transformation include the importance of accessibility of information and services provided by the public administration. In addition, the Disability Strategy in the section on education and training formulates the objective to support lifelong learning of people with disabilities via the provision of digital literacy courses. For culture, the Disability Strategy calls for supporting digitalisation of national cultural heritage through

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[1]   See https://www.mvcr.cz/clanek/rada-vlady-pro-informacni-spolecnost.aspx.

developing and implementing digital technologies enabling remote accessibility for persons with disabilities.

There is a general absence of evidence in the public domain which would even indicate what persons with disabilities consider as negative or positive experiences when presented by digitalisation and digital transformation. Some anecdotal evidence however suggests that the challenges include accessibility of digital public administration and limitations in political participation of citizens (with disabilities) due to incomplete legal regulations which would permit elections online.

Good practices

- The Guidelines on Open Access Education Resources address the need to raise awareness about Universal Design. The Guidelines advise that it is necessary to adopt the Universal Design approach at the earliest stage of digital developments. The Guidelines also call for demystifying Universal Design as an approach with high-cost implications. There is no evidence that the Universal Design is translated into concrete accessibility standards relevant to digitalisation.

- In 2020, the Government Committee for Persons with Disabilities conducted a desk study on accessibility of public administration and public services for persons with disabilities. The report provides wide-ranging information on the state of accessibility in ten areas related to digital inclusion and relevant actions performed by the state administration and the public services.

Recommendations

- The central government should establish a primary authority which would have adequate personnel, including professional capacity in disability inclusion and which would manage and coordinate digital transformation effectively

- The central government and respective ministries should ensure people with disabilities and their representative organisations take part in the relevant bodies that address the digital transformation. Initiate and maintain collaboration between stakeholders through the creation of spaces for exchanging information and knowledge on the digital inclusion of people with disabilities.

- The central government should establish requirements for stakeholders including higher education institutions and training centres which prepare experts and digital industries to use a Universal Design approach to digital developments. Provide clear regulations and guidelines regarding the use Universal Design to achieve accessibility of the results.

- Academia should conduct research and studies on the digital transformation and people with disabilities in the areas such as education, health, independent living, and engagement in the labour market. Disability inclusion should be incorporated into ICT training programmes for ICT professionals.

- People with disabilities and their representative organisations should raise awareness of the need to promote digital skills amongst people with disabilities

and actively share knowledge and good practices with all relevant stakeholders on digital inclusion.

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 strategy concerning digitalisation and digital transformation is the 'Strategy of coordinated and comprehensive digitalisation of the Czech Republic 2018+' (Digital Czechia) [2] [3] ensuring the preconditions for the long-term prosperity of the Czech Republic in the environment of the ongoing digital revolution. Digital Czechia consists of three pillars – sub-strategies forming a logical unit with a number of internal links. The Strategy focuses on a variety of beneficiaries while respecting the legal regulations:

The three pillars-sub-strategies:

The 'Digital Czechia' program consists of priority objectives further articulated in the sub-strategies. It covers areas pertinent to the interaction of Czechia with the European Union (hereinafter 'EU') within the digital agenda (1), through digital public administration (2), to the preparation and interaction of society and the Czech economy for the use of digitalisation (3).

The main reason given for dividing the strategy into three pillars - sub strategies is the consistency and continuity given by the previously adopted regulations at the EU and Czech level and the need for compliance with applicable national legislation. The Office of the Government holds the primary responsibility for overseeing the implementation of the Strategy.

The first pillar-sub strategy called 'Czechia in digital Europe'. The Czechia in Digital Europe is a key government strategy that focuses on the Single Digital Market in Europe (Digital Single Market, DSM) and sets the goals of the Czech Republic in the area of digital agenda. The aim of this pillar sub-strategy is to summarize the main topics related to the Single Digital Market policy in Europe and set the basic principles of proactive approach in promoting the relevant interests of the Czechia and its citizens. The second pillar/sub-strategy 'Information Strategy of the Czech Republic' sets out further objectives in the area of constructing the public administration information systems and also sets out the general principles of acquisition, formation, administration and operation of the public administration information systems. The main ambition of the third pillar/sub-strategy 'Digital Economy and Society' is to ensure long-term competitiveness and the overall prosperity of the Czech Republic through evolving the applicable areas with an emphasis on the readiness of the stakeholders,

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[2]   See https://www.mpo.cz/en/business/digital-society/digital-czech-republic--243601/.
[3]   See https://www.digitalnicesko.cz/zakladni-informace/.

sectors and citizens to utilise the change brought about by digitalisation; digital infrastructure and security in the digital environment. The other overarching objective is to increase the Czech Republic's readiness for the digital economy, improve the transfer of research into practice and maximize the country's economic potential through the projected outputs.

In reality, the Government's digital projects focus primarily on the online identification and on making the public services accessible on-line to citizens. However, these projects do not sufficiently tackle functioning and improvement of the state agendas integrated into so called Portál občana [Citizen's Portal].[4] Insufficient design of the overall structure is illustrated by the absence of a central state website, which would provide all relevant information about functioning of the state and its services for citizens in an accessible manner and would serve as an effective instrument for communication between the public authorities and citizens. The individual ministries currently inform the general public about their own agendas on their individual websites. Websites differ in terms of quality, clarity and comprehensibility of content, user interface and digital inclusion. This inconsistency was clearly demonstrated by the way the public was informed about the COVID-19 pandemic. For example, only some Government authorities made efforts to respect particular needs of persons with disabilities while communicating the COVID-19 measures via internet. For example, as a response to the Parliamentary initiative the main pandemic website covid.gov.cz was set up. The website is now structured according a number of life-situations such a Households, Foreigners, Volunteers. The link Disability provides COVID-19 relevant information in Easy to Read format, guidance on vaccination of persons under guardianship and information in Sign Language.[5]

Anecdotal evidence suggests that disabled people´s organisations had to some extent the opportunity to comment on the proposed strategies. Accessibility of public administration in particular was acknowledged by the Government Board of persons with disabilities in 2020 as one of the agendas for digital developments.[6] Overall, the key national strategy on digitalisation and digital transformation falls short in addressing disability inclusion. Digital inclusion is not mentioned in any of the three sub-strategies. Nevertheless, some potential impact o*n persons with disabilities can be observed.* For example, the Pillar/sub-strategy 'Information Strategy of Czechia' includes the objective of establishing 'User-friendly and effective on-line services for citizens and firms'. It considers, to some extent and only indirectly, the need to respect the diversity of potential users:

> "The objective refers to the implementation of particular services of the eGovernment for all groups of the general public (especially citizens of the Czech Republic, businesses / entrepreneurs, but also foreigners in the Czech Republic). It is not enough that online services are user-friendly, they must also be secure and more efficient for both the users and the authorities while, at the same time,

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4   See https://obcan.portal.gov.cz/prihlaseni.
5   Rekonstrukce státu (2020) *[Ne]digitální Česko. ZPRÁVA O PLNĚNÍ VLÁDNÍCH SLIBŮ V OBLASTI DIGITALIZACE.* (Non-digital Czechia. Report on the implementation of the Government´s promises).
6   See https://www.vlada.cz/cz/ppov/vvozp/odborne-skupiny/pristupnost-vejne-spravy-a-sluzeb/jednani-26--ledna-2021-186535/.

addressing a variety of everyday life situations in several public administration agendas, and as such must be designed and constructed."[7]

The Pillar/Sub strategy 3 Digital Economy and Society spells out the objective 'Development of Initial Digital Education' with a particular focus on advancing digital competencies of children, pupils and students, drawing on the principle of openness in education and public awareness, on explanation the key impact of digital technology for education, increasing awareness about cyber security issues.

In conclusion, the overarching strategy same as the three pillars/sub-strategies demonstrate only respect towards diverse needs of the users. Disability inclusion and the impact on persons with disabilities is not specifically mentioned in any of the documents. In-depth study should be conducted to better understand impact of the Strategies on people with disabilities and on advancing human rights spelled out in the UN Convention of Persons with Disabilities.

The instruments being used to implement the strategies include e- identification. The e-identification is intended to enable e-communication between citizens and public authorities and to provide access to online eGovernment services not only within the Czech Republic, but in all member states of the European Union. A new portal www.eidentita.cz was constructed (managed by the Administration of Basic Registers). The e-identification project is far from the Universal Design approach and falls short in addressing the impact of the e-identification for persons with disabilities. The project website does not address potential implications and benefits of the e-dentification for the life situations of persons with disabilities such as on-communication with public authorities. Such information could include for example e-identification portal as a virtual gateway for persons with mobility limitations to the world of online services provided by public administration authorities.

The other key instrument is the Act on accessibility of websites and mobile applications Act 99, 2019[8] This law is the consequence of the transposition of the European Directive 2102, 2016 on accessibility of websites and mobile applications of public sector entities into the Czech legal order. In connection to this Directive, the Act 99 regulates the accessibility of websites and mobile applications managed by defined entities. The explanatory memorandum to the Bill states that the legislator's aim was to achieve maximum accessibility of information provided by obliged entities, to set up a technical environment so that people with disabilities could work as equally as possible with websites, applications and their content.

Concerning the national or regional funding, the Digital Czechia Strategy does not have a focal funding scheme, except for minimal expenditures to support the administration of the Government Agent for Digitalisation. Implementation of Strategy is funded by the particular budgets of individual ministries (especially the Ministry of the Interior and the Ministry of Industry and Trade). Neither the Government Agent for Digitalisation or RVIS, as the intended coordinating body, has the competence to oversee the financial management of digital transformation. It is the responsibility of individual ministries to

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[7]   Digitální Česko (2021). *Základní informace o programu. Strategie koordinované a komplexní digitalizace České republiky 2018+.* (Digital Czechia, The Core information about the programme. The Strategy of coordinated digitalisation in Czechia) https://www.digitalnicesko.cz/zakladni-informace/.

[8]   https://www.zakonyprolidi.cz/cs/2019-99.

decide for what the funds will be used.[9] Funding of the Strategy is fragmented into Government sectors with limited opportunities to tackle cross sectoral issues such digital inclusion. The digital transformation is foreseen to be partially funded through the EU subsidy for the National Recovery Plan.[10] The digital transformation is the first in the six pillars of the National Recovery Plan. The main intention of the Plan is to increase productivity, maintain employment and strengthen the competitiveness of the Czech Republic through rapid digitisation, building smart infrastructure and so-called green transition, including reducing energy and material intensity. Czechia is expected to invest CZK 25 040 billion (approx. EUR 1 billion) in digitalisation as part of the National Recovery Plan to fund and subsidise both the design and construction of elements related to emerging technologies. There is an absence of evidence indicating whether and how the disability perspective is being considered in terms of funding new technologies which are required to be disability accessible or providing funding for the purchase of products / services (including assistive ones) or skills training for persons with disabilities and digital professionals on disability and accessibility matters. Nevertheless, the Act 99[11] on the accessibility of websites and mobile applications is expected to guarantee to some extent the new technologies and products developed also as part of the National Recovery Plan being disability accessible.

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

The Digital Education Strategy 2020[12] (hereinafter SDV) is a document approved on 12 November 2014 by Government Resolution 927/2014. It is the most recent document relevant to digital technologies in education. The strategy focuses on generating suitable conditions and processes that will lead to such outputs, methods and forms of education which correspond to the current state of knowledge, with the requirements of social life and the labour market, influenced by the development of digital technologies and the information society. Ministry of Education, Youth and Sports (MoEYS) considers the SDV mission to encourage changes in both methods and forms of education, as well as in educational objectives.

The SDV was completed in 2014 through a dialogue between the MoEYS, the professional community, the non-profit sector and other interested parties. The key SDV objectives include ensuring non-discriminatory access to digital educational resources, to guarantee preconditions for advancing the digital literacy of students, ensure conditions for the development of digital literacy and informatics mindset of teachers, to ensure construction and renewal of educational infrastructure, to support innovative practices; monitoring, evaluation and dissemination of their results, and to deliver a system for supporting of schools in digital technology developments.

One of the key objectives declared in SDV is to reduce inequalities in education. The SDV admits that not all pupils hold equal access to digital technologies and digital

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[9]   Digitální Česko (2021). *Základní informace o programu. Strategie koordinované a komplexní digitalizace České republiky 2018+.* (Digital Czechia, The Core information about the programme. The Strategy of coordinated digitalisation in Czechia) https://www.digitalnicesko.cz/zakladni-informace/.

[10] See https://www.enovation.cz/narodni-plan-obnovy?gclid=CjwKCAjwnPOEBhA0EiwA609RebLNo62D0clZTh3AtLRDqDFJCiU9K2WYv8WA4gtSLp7xxq8j9tzX3BoCQTcQAvD_BwE.

[11] See https://www.zakonyprolidi.cz/cs/2019-99.

[12] See https://www.msmt.cz/uploads/DigiStrategie.pdf.

resources. The SDV concludes that one of the main tasks of today's education is to bridge emergent digital gaps. The SDV does not make any reference to disability or special educational needs and inclusion. The disability perspective is absent in the strategy as are measures which would address digital inclusion and emerging limitations in the accessibility of digital technologies for learners with disabilities. The review of the annual reports on implementation of the SDV shows on-going unawareness of the policymakers about disability and inclusion. Completion of an evaluation report which would provide comprehensive information on implementation of the SDV is not available in the public domain.

The other relevant sector-specific strategy is the Strategic Framework for Development of Health Care in Czechia 2030, Implementation Plan 2.3 [Strategický rámec rozvoje péče o zdraví v České republice do roku 2030, Implementační plán č. 2.3 Digitalizace zdravotnictví].[13] Overarching objective of the Strategy is to support reform of the health care services and enhance their accessibility. It draws on the premise that digital technologies have the potential to strengthen the capacity of individuals to look after their health and to contribute to the general efficiency of the health care system. Innovative digital solutions are expected to contribute to promoting the health and quality of life of citizens and to enable more efficient ways of organising and delivering health and social services. The Implementation Plan 2.3 further articulates specific objectives on: the structure of activities, the schedule and the planned budget, a basic set of monitored indicators, management, an evaluation system and the communication plan. As observed in other relevant sector specific strategies, direct reference to implications of the transition to digital technologies for persons with disabilities were not identified in the Implementation Plan 2.3. However, some consequences for the general public can be identified in some of the measures such as patients' access to their health data and the domain of research on mobile healthcare (mHealth) and telemedicine technologies at all levels of healthcare provision, especially for end-users (hospitals, dispensaries and patients). Overall, the Implementation Plan 2.3 is incomplete in taking disability inclusion perspective into consideration.

The Digital Literacy Strategy of the Czech Republic 2015-2020[14] approved by the Government Resolution 523, 2015 reflects the societal changes due to growing importance of information, knowledge and digital technologies. The Strategy addresses these developments and formulates measures which are accepted to advance the digital skills of the citizens. These measures are divided into six strategic objectives: Employment; Competitiveness; Social inclusion; Family support; Digital public services; Support for the education and learning system through digital technologies. Particularly disability relevant is the third objective - Social Inclusion. The Strategy declares that digital technologies have the potential to contribute to tackling social exclusion. Part of the Strategy, entitled 'Segmentation and typology of digitally excluded persons and persons at risk of digital exclusion in the Czech Republic',[15] reports on the analysis of the Czech population and digital exclusion. The main

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[13] See https://www.mzcr.cz/wp-content/uploads/2020/08/2.3_Digitalizace-zdravotnictv%C3%AD_vypo%C5%99%C3%A1dan%C3%A9-p%C5%99ipom%C3%ADnky_.docx.

[14] Czechia (2015), *Strategie digitální gramotnosti ČR na období 2015 až 2020.* (Digital literacy strategy 2015 – 2020) https://www.mpsv.cz/documents/20142/848077/strategie_dg.pdf/2c044975-1c29-fcba-ba22-f1c1388c1865.

[15] DigiStrategie 2020. *Segmentace a typologie osob digitálně vyloučených a osob ohrožených digitálním vyloučením v ČR.* (Segmentation and typology of digitally excluded persons and persons at risk of digital exclusion in the Czech Republic), https://portaldigi.cz/segmentace/.

variables identified in the report as contributing to social exclusion include age, education, income, and regional disparities. The report does not mention disability as a variable in digital exclusion. Particularly disability relevant is the objective Ensuring accessible facilities in libraries and community centres. One of the very few numerical targets specified in the strategy is objective 3.1 - where the target of reducing the number of digitally excluded persons and persons at risk of digital exclusion was set. The most recent report from 2018 on the implementation of the Strategy available on the public domain, indicates difficulties in completing this objective (accomplished by only 50 % compared to the plan).

The particular project entitled 'Development of Digital Literacy System Support'[16] further implements the Digital Literacy Strategy of the Czech Republic for 2015 - 2020. The aim was to develop and disseminate training materials that should increase efficiency and the availability of life-long learning for professionals. A note on universal design in on-line education can be found in one of the outputs. The Guideline on Open Education (one of the outputs) advice that educational materials should be available to everyone, including users who need trainings material accessible in respective format. For example, a person with hearing impairment needs a video accompanied by subtitles.[17]

The use of digital and communication technologies has been increasing over the decade. There were 9.31 million internet users in the Czech Republic in January 2020.The number of internet users in the Czech Republic increased by 19 thousand (+0.2 %) between 2019 and 2020. There were 5.70 million social media users in the Czech Republic in January 2020. The number of social media users in the Czech Republic increased by 356 thousand (+6.7 %) between April 2019 and January 2020.[18]

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[16] DigiStrategie 2020. *Rozvoj systémové podpory digitální gramotnosti.* (Development of the Systemic Support of the Digital Literacy Strategy 2015 – 2020) https://digistrategie.cz/.

[17] MoLSA, FDV (2018), *Otevřené vzdělávací zdroje OER a podpora jejich zavádění do praxe*. (Open learning sources CER and support for implementation) 7eb0fce4-4e58-4f71-9df5-7577af9178e6 (portaldigi.cz).

[18] See https://datareportal.com/reports/digital-2020-czech-republic.

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 recent disability specific strategy in Czechia is the National Plan for the Promotion of Equal Opportunities for Persons with Disabilities 2021–2025[19] (disability strategy). The aim of the Disability Strategy is to ensure equal rights and equal opportunities for persons with disabilities, and to generate an environment that is minimally restrictive/barrier ridden. The introduction section states that the National Strategy aims at establishing and shoring up conditions and support that enables persons with disabilities to live as independent a life as possible, and to enhance their abilities and skills. For the most part, the Disability Strategy follows the individual articles of the UN Convention on the Rights of Persons with Disabilities. The introduction to each strategic area includes the relevant article of the Convention to which this area applies, and a brief description of the current situation as appears in Czechia. Each strategic area contains targets to be met in the respective period, the set of deadlines, measures and the ministries responsible for implementation. However, the Disability Strategy considers digitalisation only from the perspective of accessibility.

The Disability Strategy identifies the following opportunities, challenges, targets relevant to digitalisation and digital transformation:

- Opportunity: accessible public administration, information and services
  Rationale: the accessibility of digital public administration documents for people with disabilities remains problematic. Citizens can in principle use eGovernment services and communicate with authorities on-line, for example through so called data box [datová schránka]. However, problems occur with the use of e-documents and other means of submission, as only some public administration e-documents are accessible for persons with disabilities.
  Objective: ensure accessibility of public administration, the websites and electronic services of individual ministries and institution through providing guidance, trainings for professionals with aim to implement the Act 99 on accessibility of websites and mobile applications and on the amendment of Act 5 on public administration information systems; prepare the initial report on the state of website accessibility in Czechia and submit it to the European Commission and publish by 31 September 2021.

- Opportunity: accessible opportunities for lifelong learning
  Rationale: lifelong learning facilitates new knowledge and skills for engagement in employment. It also serves as an instrument for social inclusion and participation in civic society. It is therefore appropriate to expand the range of accessible educational programs for people with disabilities and, given the need for knowledge of information technology, to focus on courses dealing with the development of digital literacy.

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[19] Government Board for Persons with Disabilities (2020), *National Plan for the Promotion of Equal Opportunities for Persons with Disabilities 2021–2025 Approved by Czech Government Resolution No. 761 of 20 July 2020 Prague 2020*, https://www.vlada.cz/assets/ppov/vvozp/aktuality/National-Plan-for-the-Promotion-of-Equal-Opportunities-for-Persons-with-Disabilities-2021_2025.pdf.

Objective: expand lifelong learning opportunities for people with disabilities through education and training programs, including digital literacy courses.

- Opportunity: appropriate conditions for people with disabilities to participate in cultural life
  Rationale: information technology has a potential to make exhibitions, art museums and other cultural events accessible for persons with disabilities remotely.
  Objective: support the digitalisation of national cultural wealth with the aim to enable remote access and various types of presentation.

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

Relevant to the rights of persons with disabilities is the Social Inclusion Strategy 2021–2030. It is the national document covering the areas considered as important for the social inclusion of socially excluded people and those at risk of social exclusion. The general objectives of the Strategy include ensuring equal access to all resources, rights, goods and services. The Strategy consists of specific agendas such as education, health and care, employment, housing access to goods and services. The objectives include to:

- reduce inequalities affecting people with various types of disadvantage in society including people with disabilities;
- reduce the number of barriers in the public space – in terms of physical, orientation and communication barriers and to promote gender equality, especially in the areas of the labour market, equal pay, domestic and gender-based violence between women and men in family and social policy;
- to increase the awareness of public administration employees at all levels and local government about the negative consequences of an unequal access for socially excluded persons or persons at risk of social exclusion.

Although the Strategy is the key document which could well address the potential of digitalisation and digital transformation, the 'digital gap' as 'contributor' to social exclusion and inequality is not directly and meaningfully discoursed in the Strategy.

Another highly relevant strategy is the National Strategy for Development of Social Services 2016 – 2025 prepared by Ministry of Labour and Social Affairs (MoLSA) together with other stakeholders including service providers and disabled peoples´ organisations.[20] The core focus of the Strategy is deinstitutionalisation. Insufficient supply and availability of community-based services and low quality of social services lead to a reduction in the quality of life of people with reduced self-sufficiency and to a restriction of their freedom in choosing a place of living.[21] The Strategy admits deficiencies in providing necessary information to the public about adequate support and services as well as calling for support for informal carers via remote consultancy or guidance. However, digitalisation and digital transformation having a substantial role to play and provide opportunities in supporting people with disabilities in their community is not part of the Strategy. Issues such as designing and construction of

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[20] See https://www.mpsv.cz/documents/20142/577769/NSRSS.pdf/af89ab84-31ac-e08a-7233-c6662272bca0.

[21] See https://deinstitutionalisationdotcom.files.wordpress.com/2020/05/eeg-di-report-2020-1.pdf.

elements of care related to new technologies e.g. expansion of 5G, construction of relevant infrastructure, assistive technologies and devices are not even debated in the Strategy.

4 Promoting disability inclusion through funding, education and training

4.1 How funding promotes disability-inclusive digitalisation and digital transformation

The absence of comprehensive information in the public domain related to the funding of the development and roll out of digitalisation and digital transformation makes it difficult to formulate conclusions about whether and/or to which extent the disability perspective is being addressed. Anecdotal evidence, however, suggests that the disability perspective is not systematically addressed in the Government funding schemes relevant to the development and roll out of digitalisation and digital transformation.

On 1 October 2020 (the call was open between December 2020 – March 2021) the Ministry of Industry and Trade announced the Technology Support Programme (within the implementation of the Operational Program Enterprise and Innovation for Competitiveness 2014-2020). The call was aimed at supporting the growth and competitiveness of smaller scale private businesses through digital transformation and contributing to the development of the regions. The individual calls of the Technology Support Programme were set at CZK 550 million.[22] Despite the potential of the Programme to promote digital inclusion, the disability perspective was not considered in the call (particular requirements, conditions or expectations).

The allowance for special aid administrated by MoLSA is a benefit for people with severe disabilities to purchase aids and/or assistive devices that provide them with support for engagement in employment, education and training, or for social participation.[23] The anecdotal evidence suggests that this allowance is used primarily for purchasing a guide dog, special car adjustments and apartment adaptations.

As the given examples illustrate, the funding falls short in promoting disability inclusion through digitalisation and digital transformation.

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

Disability and accessibility matters are addressed, in a fragmented rather than systematic way, via the education or training of digital professionals (such as web-designers, algorithm designers and engineers or those focused on Artificial Intelligence, automation or robotics) including in further and higher education or ongoing professional development. There are no specific policies, measures or guidelines which would regulate higher education institutions in providing education or training for future digital professionals in regard to disability and accessibility matters. In addition, there is an absence of official requirements for accreditation of the study programmes submitted to the National Accreditation Authority, which would promote disability inclusion through the education and training of digital professionals. However, some programmes and training courses do, to some extent, address disability matters. Comprehensive information on the content of education and training of digital professionals from a disability inclusion perspective was not identified. To gain at least

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[22] See https://www.mpo.cz/cz/podnikani/dotace-a-podpora-podnikani/oppik-2014-2020/vyzvy-op-pik-2020/vyzva-xiii--programu-podpory-technologie--257106/.

[23] See https://www.mpsv.cz/web/en/disability.

some overview of the state of the art, the author of this report approached several academics (digital experts) from relevant universities. The results presented in table 1 show that disability inclusion is only partially considered in education and training of digital professionals.

Table 1. Disability matters present in education and training of digital professionals

University	Disability matters present in education and training of digital professionals	People with disabilities contribute to education and training of digital professionals
Masaryk University	NO	YES
Czech Technical University	NO	YES
Palacky University	NO	NO
South Bohemia University	YES	NO
West Bohemia University	YES	YES
Charles University	NO	NO

An example of relevant good practice is the University of West Bohemia which addresses disability inclusion in the study programmes on Software engineering, Computer modelling and Cybernetics. Anecdotal evidence suggests that whether disability inclusion is incorporated into higher education institutions study programmes or into particular IT subjects is dependent on the individual expertise or professional interests of academics and lecturers involved in the programmes.

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

Digital inclusion and accessibility are not systematically addressed during the formal education and ongoing professional development of those focused on web design, transportation, the built environment, support in employment, education, and social services including independent living.[24]

Life-long learning courses on digital inclusion and accessibility are available to the general public at a small number of universities. The courses are primarily focused on assistive technologies for people with visual impairment. One example is the course provided by the Masaryk University, Brno.[25] The Teiresias University Center (Masaryk University) provides relevant courses on digital inclusion and technologies. In addition, the centre provides counselling and methodological facilities for high school students and teachers. There appears to be other courses provided by disability support centres attached to other universities in the country. However, a comprehensive enquiry should be conducted to gain at least an indicative picture of the opportunities for professional development of accessibility and inclusion professionals.

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[24] NRZP (2018). *Universal learning design – inovace dokumentových formátů* (Universal learning design – innovations in document formats) https://nrzp.cz/projekty/universal-learning-design-inovace-dokumentovych-formatu/.

[25] See https://is.muni.cz/obory/2641.

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

The National Disability Strategy 2021-2025 addresses digital inclusion via the training of people with disabilities in the section 8 on education. Measure 8.5.1 spells out the objective to support lifelong learning of people with disabilities in digital literacy courses. The Disability Strategy lacks measurable outcomes which would allow effective monitoring.

Evidence which would indicate whether training to gain or improve knowledge and understating about digital technologies is accessible for persons with disabilities was not identified in the public domain. However, there are instances which demonstrate some concerns of the Government and measures taken to dismantle the digital gap. For example, Guidelines on Open Access Education Resources[26] which was prepared as part of the government Digital Literacy Strategy addresses to some extent the disability perspective. This document is limited in addressing disability inclusion as a guiding principle. Nevertheless, some awareness about making trainings on digitalisation accessible can be observed in the document. For example, the Guideline addresses the need to raise awareness about accessibility of open access resources though questioning some stereotypes and myths. One myth mentioned is the myth that producing materials based on Universal Design approach is expensive. The document argues: 'Applying a universal design is not costly if it happens at an early stage of project, not when the project is completed.'[27]

Despite limitations in addressing digital inclusion there is a number of examples how people with disabilities are able to access training to gain or improve knowledge and understanding of using digitalisation and digital transformation. For instance, the Labour Offices have started to provide on-line training opportunities for *the general public to gain or improve soft skills, knowledge and understanding of using digital technologies.*[28]

A number of NGOs and DPOs are engaged with refining knowledge and understanding how to engage with digitalisation and digital transformation. For example, project E-Inclusion focuses on tackling digital exclusion due to disability via training courses on digital literacy and assistive technologies. Other examples are training materials on how to use digital technologies for persons with learning difficulties developed in the Easy-to-Read format.[29] There are also examples of how the disability perspective is considered in promoting digital technologies though training videos available in the public domain and developed with the support of the EU funding programmes.[30] However, such opportunities seem to be available only in some locations such as in larger urban settings.

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[26] MoLSA, FDV. (2018) *Otevřené vzdělávací zdroje OER a podpora jejich zavádění do praxe. Projekt Rozvoj systémové podpory digitální gramotnosti* (The Open Learing Sources OER), https://media.portaldigi.cz/7eb0fce4-4e58-4f71-9df5-7577af9178e6.

[27] MoLSA, FDV. (2018) *Otevřené vzdělávací zdroje OER a podpora jejich zavádění do praxe. Projekt Rozvoj systémové podpory digitální gramotnosti* (The Open Learing Sources OER), https://media.portaldigi.cz/7eb0fce4-4e58-4f71-9df5-7577af9178e6.

[28] See https://www.mesec.cz/aktuality/urad-prace-spousti-pilotni-program-novych-online-vzdelavacich-kurzu/.

[29] See http://www.spmpcr.cz/wp-content/uploads/delightful-downloads/2015/06/prace_s_pocitacem.pdf.

[30] See https://www.jaknainternet.cz/page/1653/internet-a-handicapovani/.

In conclusion, people with disabilities are not excluded from training opportunities to gain or improve knowledge and understanding of using digitalisation and digital transformation. However, the picture is incomplete to formulate an exhaustive conclusion.

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

There is an absence of evidence such as policy briefings available in the public domain which would indicate what non-governmental actors consider as the most significant opportunities presented by digitalisation and digital transformation for advancing the rights of persons with disabilities. It would be appropriate to conduct an enquiry with the aim of identifying and assessing such opportunities. Since the National Disability Plan 2025[31] was elaborated together with the Czech National Disability Council, some such opportunities can be identified in the Plan. For example, the Disability Strategy considers the accessibility of public administration information and services, digital transformation and development of eGovernment services as an issue of equal rights. Secondly, the Plan refers in this respect to assistive and medical devices which have an immense potential to contribute to social inclusion of people with disabilities, to gain and retain employment, to access to quality education, and also to independent living. In addition, the Plan has the objective to assure availability of funding for purchasing such devices by persons with disabilities. With regard to technological development, it is necessary to support through a national program or EU funds the manufacturers in development of the assistive devices and aids relevant to inclusive digital transformation. Finally, the Plan refers to life-long learning which is considered as a tool facilitating social inclusion and full participation in civil society. It calls for expanding the range of educational programs on information technology and digital literacy for people with disabilities.

The Report on Accessibility 2020 had anticipated that Laws would be available online by 2022. The Report on Accessibility 2020 further states that, by 2022, the eCollection/eLegislation project should be launched, providing online access to legal documents, including for people with disabilities. Through the project, people with disabilities should be better involved in the process of preparing legislation.[32] The Government Committee for Disabled Citizens considers such a plan an important opportunity to support people with disabilities in their active participation in civil society.

Accessible employment services including relevant information provided by the labour office is generally regarded as a facilitator of gaining and retaining engagement in employment for people with disabilities. The information about public services for persons with disabilities in employment is available online on the MoLSA portal. MoLSA claims that the portal presents the information aligned with the accessibility principles stipulated by the Accessibility Act. However, the actual submission of applications to labour offices is reported as problematic. It is therefore essential to take

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[31] See https://www.vlada.cz/assets/ppov/vvozp/dokumenty/Narodni-plan-2021-2025.pdf.

[32] Úřad vlády České republiky. Oddělení sekretariátu Vládního výboru pro osoby se zdravotním postižením (2020), *Souhrnná zpráva o stavu přístupnosti veřejné správy a veřejných služeb pro osoby se zdravotním postižením.* (Office of the Government of the Czech Republic. Secretariat of the Government Committee for Persons with Disabilities. Summary report on the state of accessibility of public administration and public services for persons with disabilities.) https://www.vlada.cz/cz/ppov/vvozp/dokumenty/zprava-o-pristupnosti-verejne-spravy-a-verejnych-sluzeb-pro-osoby-se-zdravotnim-postizenim-185863/.

necessary measures which would make on-line submissions for employment support services possible.[33]

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

There is an absence of evidence which would indicate what non-governmental actors consider to be the most significant challenges presented by digitalisation and digital transformation particularly with relevance to the rights of persons with disabilities. There are more generic concerns which are likely to also apply to people with disabilities. For example, the NGO Rekonstrukce státu reports that the overall management of digital transformation on the national level is fragmented. Specific procedures and measures are not structured comprehensively. The funding is limited and inefficient. The leading authority (the Government office) does not have the necessary powers to move digitalisation forward effectively. The state administration does not have sufficient expert capacity to do so.[34]

The Czech electoral laws do not explicitly stipulate the obligation for polling stations to be barrier-free and accessible on-line since the electoral law does not yet allow online election and the introduction of online elections is not expected to take place soon. Danger of misuse of these systems is the argument provided. Yet, ballot papers are not yet available to the voters prior the elections.

In 2020, the Government Committee for Disabled Citizens published report on accessibility of the public administration.[35] The report comprises the following suggestions for improving accessibility of public administration:

- provide professional training on digital transformation for public administration personnel including those responsible for writing proposals associated with the public administration services;
- produce guidance for public administration personnel on the specific needs of people with disabilities;
- improve fulfilling the obligations to guarantee communication with persons with disabilities in their chosen communication system (sign language, transcription into text, SMS communication, etc.).

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[33] Úřad vlády České republiky. Oddělení sekretariátu Vládního výboru pro osoby se zdravotním postižením (2020), *Souhrnná zpráva o stavu přístupnosti veřejné správy a veřejných služeb pro osoby se zdravotním postižením.* (Office of the Government of the Czech Republic. Secretariat of the Government Committee for Persons with Disabilities. Summary report on the state of accessibility of public administration and public services for persons with disabilities) https://www.vlada.cz/cz/ppov/vvozp/dokumenty/zprava-o-pristupnosti-verejne-spravy-a-verejnych-sluzeb-pro-osoby-se-zdravotnim-postizenim-185863/.

[34] See https://www.rekonstrukcestatu.cz/download/3nQoIg/nedigitalni_cesko.pdf.

[35] Úřad vlády České republiky. Oddělení sekretariátu Vládního výboru pro osoby se zdravotním postižením (2020), *Souhrnná zpráva o stavu přístupnosti veřejné správy a veřejných služeb pro osoby se zdravotním postižením.* (Office of the Government of the Czech Republic. Secretariat of the Government Committee for Persons with Disabilities. Summary report on the state of accessibility of public administration and public services for persons with disabilities) https://www.vlada.cz/cz/ppov/vvozp/dokumenty/zprava-o-pristupnosti-verejne-spravy-a-verejnych-sluzeb-pro-osoby-se-zdravotnim-postizenim-185863/.

6 Conclusions and recommendations

6.1 Conclusions

- The 'Digital Czechia' is the overarching Government strategy on digitalisation and digital transformation broken down into three pillars/sub-strategies. These sub-strategies respect to some extend diversity of potential users, however, they fall short in addressing particular challenges of digitalisation and digital transformation to advance the rights of persons with disabilities. Understanding of disability related diversity is only demonstrated to a limited degree both overall and in the specific fields of digitalisation and digital transformation. In addition, the Universal Design approach is not considered as a guiding principle for digital developments and it is almost entirely absent in the Strategies on digital transformation. There is no evidence that the Universal Design is translated into concrete accessibility standards relevant to digitalisation.

- The National Plan for the Promotion of Equal Opportunities for Persons with Disabilities 2021–2025 refers to challenges related to digitalisation and digital transformation, including accessibility and assistive technologies. In particular, the Disability Plan calls for paying close attention to limitations in providing eGovernment on an equal basis with others. In addition, the relevant objectives spelled out in the Disability Strategy include accessible websites and public e-administration services, and support for the lifelong learning of people with disabilities in order to improve their digital literacy. However, the objectives presented in the Disability Strategy are formulated only generally and without specific targets.

- The absence of comprehensive evidence on the funding of the development and roll out of digitalisation and digital transformation does not allow the formulation of a conclusion about whether and/or to which extent a disability perspective is taken. The disability perspective is not systematically addressed in other Government funding schemes relevant to digitalisation and digital transformation. The existing and limited evidence suggests that the disability perspective is not considered with respect to funding new technologies to be disability inclusive.

- The Government management of digitalisation and digital transformation is fragmented into individual ministries. Digital transformation is far from progressing satisfactorily, notably with respect to digital inclusion. Funding is limited and inefficient. The Government Council for the Information Society is the coordination and managing authority chaired by the Government Agent. However, this Government Council has no jurisdiction and has only limited capacity for effective coordination and communication with stakeholders including disabled peoples´ organisations. Nor does the Government comply with the assigned coordination role.

- Measures, requirements or guidelines which would systematically guide higher education institutions in providing the education or training for future digital professionals with respect to disability and accessibility matters do not appear in the relevant documents. Disability inclusion is only incorporated into some higher education study programmes or programme subjects and in an *ad hoc* rather than coordinated way.

- There are training programmes available for the general public to gain or improve knowledge and understanding of using digitalisation and digital transformation. Persons with disabilities are not excluded from these training programmes, but are not particularly supported either. An in-depth study would need to be conducted to identify whether people with disabilities are able to access such training programmes. Some NGOs and DPOs are engaged with improving knowledge and understanding of digitalisation and digital transformation of persons with disabilities.

- There is a lack of evidence available in the public domain, about the experience of people with disabilities of digitalisation and digital transformation and of actions to harness opportunities and address challenges. The Disability Strategy refers to the accessibility of public administration information and services in connection with the digital transformation and development of eGovernment services. With regard to technological developments, the Disability Strategy calls for supporting financially the manufacturers in the development of assistive devices and aids relevant to inclusive digital transformation through national programmes and/or EU funds.

6.2 Recommendations

- The central government should establish a central authority that would manage and coordinate digital transformation effectively and which would have adequate personnel including professional capacity in inclusive digital transformation.

- The central government and respective ministries should ensure people with disabilities and their representative organisations take part in the relevant bodies that address the digital transformation. Initiate and maintain collaboration between stakeholders through the creation of spaces for exchanging information and knowledge on the digital inclusion of people with disabilities.

- The central government should establish requirements for stakeholders including higher education institutions and training centres which prepare experts and digital industries to use a Universal Design approach to digital developments. Provide clear regulations and guidelines regarding the use Universal Design.

- Academia should conduct research on and evaluation of the digital transformation and people with disabilities in areas such as education, health, independent living, and engagement in the labour market.

- People with disabilities and their representative organisations should raise awareness of the need to promote digital skills amongst people with disabilities. Share actively knowledge and good practices with all relevant stakeholders on digital inclusion.