Digitalisation and digital transformation in Romania

Implications for persons with disabilities

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1 Executive summary

The government-led digital strategy currently in place is the National Strategy on the Digital Agenda for Romania for 2020, which was adopted in 2015. Its implementation and replacement with an updated document is being led by the Authority for the Digitalisation of Romania, which was established in 2020. The Strategy barely mentions people with disabilities, including some statistical data. It identifies two 'opportunities' relevant for people with disabilities: one in the education field and one related to social benefits. For its implementation, which is still in a very early stage, the Government relies heavily on EU Funds and international financial institutions. While it mentions its implementation would require EUR 3 963 8 million, the National Strategy provides no information in relation to the percentage of the budget that will be allocated from the state budget for such purpose.

Romania is also in the process of adopting the Strategy on the Digitalisation of Education in Romania-SMART-Edu. Its draft makes several references to people with disabilities. For example, it includes a special section related to supporting people with disabilities in the development of skills basic and advanced digital.

The measures envisaged for offering such support include creating an innovation hub which would ensure the promotion of the accessibility of educational technologies for people with disabilities; opening a business incubator to fund initiatives aimed at ensuring such accessibility and creating monthly scholarships for people with disabilities who want to develop advanced digital skills. The adoption of this Strategy could have a positive impact for people with disabilities, particularly for children and young people with disabilities. Given the context and the dire need of measures to be taken in the field, its speedily adoption and implementation is highly desirable.

Regarding the disability specific national strategy, the one currently in place is in the process of being replaced by the 2021-2027 National Strategy on the rights of persons with disabilities. However, regarding digitalisation and digital transformation, the modifications proposed by the new version are minor. None of the two documents award priority to this topic. Specific relevant measures are proposed mainly in relation to ensuring more access to assistive technologies and to using digitalisation to simplify and deal more efficiently with the licensing procedure of social services.

One fifth of Romanians have never used the internet. Moreover, most people with disabilities in Romania do not use the Internet to access information and services, and of those who do use it, a significant proportion experience difficulties. Access to online information and services is very difficult, accessibility not being at the moment implemented on a large scale not even among public institutions. Moreover, Romania is ranking the lowest from EU Member States in the number of people having superior digital skills (only 10 %), leading with the highest percentage of people with low digital skills (43 %).

Despite this, opportunities for people with disabilities to benefit from digitalisation and digital transformation do exist. Measures were initiated, within a process aimed at transposing EU legislation, in particular the Web Accessibility Directive, to ensure web accessibility and access to online services, particularly those services made available online by public institutions. If adequately implemented, the digitalisation of the process

could ensure the coherence of the regulation, provision and monitoring of social services.

A digitalised system could also be used to ensure people with disabilities have access to the free local and national transportation available for them according to national laws; people with visual impairments could also highly benefit of the creation of so-called smart cities, which can communicate with them through mobile applications.

Good practices

There is evidence that Romania has certain initiatives through which it promotes disability inclusion by using instruments offered in the context of digitalisation and digital transformation. One such promising practice is the creation of the National Disability Management System, a project which should tackles the problems related to a centralized national collection, storage and distribution of information on people with disabilities (adults and children) to central and local public authorities, individual beneficiaries and institutional partners. Unfortunately, this project, although initiated in 2019, has yet to provide significant practical improvements in the provision of social services.

Another promising practice is constituted by the different interventions aimed at ensuring access to assistive technologies. To this end, the National Authority for the Rights of Persons with Disabilities, Children and Adoptions is currently carrying out a campaign to inform potential users about the available and the advantages of purchasing such products, also offering vouchers of up to EUR 5 000 for such purchases. Moreover, the 2021-2027 National Strategy on the rights of persons with disabilities provides for the necessity to extend the list of assistive technology related products for which expenses can be deducted from the state budget. In the same time however, access to assistive technologies remains problematic in Romania.

Lastly, several initiatives were identified among both private and public educational institutions, aimed at ensuring disability inclusive environments for studying, where people could develop their skills related to digitalisation and digital transformation. For example, the Babes Bolyai University created an Office for Students with Disabilities, which facilitates and supports the inclusion of students with special educational needs into the academic life, by identifying these needs and by informing the academic personnel about the learning needs of students with disabilities. The University of Bucharest implements a series of measures for the inclusion of people with disabilities - students, professors and administrative staff - through a project entitled "Quality inclusive education within the academic community of the University of Bucharest, with a focus on people with disabilities", funded by the Ministry of Education and Research through the Institutional Development Fund (FDI). The Changes will be carried out for the accessibility and modernisation of the access infrastructure in the spaces of the University. At the same time, efforts will be made to expand the guidance system with step-hear technology for people with visual impairments. The project also provides interventions for the accessibility of educational and residential spaces for students with disabilities. The project does not include trainings for digital professionals.

Moreover, there are a variety of private initiatives of offering free or paid coding courses for children, including children with hearing impairments. Some of them also aim at educating and involving in the education of children digital professionals. For example,

The Dalia's Book Association proposes a free online coding club, called 'Code Hero', which will operate son a voluntary basis. The programme mentors are selected among IT professionals and technical faculty students who want to bring change in the lives of children. The programme, initiated in 2020, was initially dedicated to students aged between 9 and 13 in urban and rural areas throughout Romania, including students with hearing impairments. It subsequently extended its target group to children up to 16.[1]

Recommendations

The Authority for the Digitalisation of Romania should ensure the disability inclusiveness of the new digital strategy which is to be developed, with due consideration being given to accessibility requirements. This strategy should ensure a coherence of adopted measures, across sectors of activity; its implementation must be ensured by providing it with efficient instruments.

The Strategy on the Digitalisation of Education in Romania -SMART-Edu provides the opportunity to have a significant impact on promoting the rights of people, and particularly children and young people with disabilities. Its speedily adoption and implementation is highly desirable, as is the adoption of adequate instruments which will ensure its practical implementation.

An Accessibility Code should be created by the National Authority for the Rights of Persons with Disabilities, Children and Adoptions and the Authority for the Digitalisation of Romania, in collaboration with relevant Ministries. This Code should take into consideration accessibility requirements as provided in the EU Web Accessibility Directive and the European Accessibility Act; it can be used as an efficient tool to transpose EU legislation in the domestic system. This Code should include elements regarding accessibility for people with disabilities with all types of support needs, particularly in the area of mobility and transportation, education, access to services access to social services and access to assistive technologies.

[1] See https://www.carteadaliei.ro/ and Dalia's Book (*Cartea Daliei),* (2020), Code Hero begins, a coding club for children (*Incepe Code Hero, un club online gratuit de programare pentru copii),* available [in Romanian] at https://ziare.com/scoala/educatie/incepe-code-hero-un-club-online-gratuit-de-programare-pentru-copii-1603369.

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

In February 2015, the National Strategy on the Digital Agenda for Romania for 2020 was adopted.[2] This Strategy defined the following four major areas of action:[3]

1. area of action 1 - eGovernment, Interoperability, Cyber Security, Cloud Computing, Open Data, Big Data and Social Media – increasing the efficiency and reducing the costs of the Romanian public sector by modernizing its administration;
2. area of action 2 – ICT (Information and Communication Technologies) in Education, Health, Culture and eInclusion - intervening at a sectoral level and ensuring that ICT investments will have a positive impact in the social context;
3. area of action 3 - eCommerce, Research, Development and Innovation in ICT – supporting economic growth in the private sector;
4. area of action 4 - Broadband and Digital Services Infrastructure – improving access to ICT equipment and Internet, which will also facilitate social inclusion, increasing digital literacy and improving digital skills.

The Strategy itself barely mentions people with disabilities. It only states that in 2014 there were over 700 000 people with disabilities in Romania and that only 28 % of people belonging to vulnerable groups (including people with disabilities) had access to Internet on a weekly basis.[4]

The Strategy identifies two “opportunities” that are relevant for people with disabilities: one in the education field and one related to social benefits. As such, it states that there is an “opportunity” to promote the development of digital skills at EU level among all inhabitants of a country: pupils, students, adults in continuing education and people in a situation of social exclusion (with disabilities, below the poverty line, from disadvantaged rural areas, etc.).[5] It also mentions the possibility to use digitalisation to support the registration of people with disabilities in view of providing access to certain rights, such as social benefits (monthly allowances/ allowances for carers etc.).[6]

The implementation this Strategy was estimated to need an investment of about EUR 3.9 billion. These needs were to be covered partially from funds to be obtained from the EU and from other IFI (International Financial Institutions), such as the World Bank

[2] Romanian Government, (2020), National Strategy on the Digital Agenda for Romania for 2020 (*Strategia Națională privind Agenda Digitală pentru România 2020*), available at https://www.ancom.ro/uploads/links_files/Strategia_nationala_privind_Agenda_Digitala_pentru_Romania_2020.pdf.

[3] Romanian Government, (2020), National Strategy on the Digital Agenda for Romania for 2020 (*Strategia Națională privind Agenda Digitală pentru România 2020*), pp. 18-19.

[4] Romanian Government, (2020), National Strategy on the Digital Agenda for Romania for 2020 (*Strategia Națională privind Agenda Digitală pentru România 2020*), p. 81.

[5] Romanian Government, (2020), National Strategy on the Digital Agenda for Romania for 2020 (*Strategia Națională privind Agenda Digitală pentru România 2020*), p. 129.

[6] Romanian Government, (2020), National Strategy on the Digital Agenda for Romania for 2020 (*Strategia Națională privind Agenda Digitală pentru România 2020*), p. 140.

and the European Bank for Reconstruction and Development (EBRD). The rest was to be obtained from national and local budgets.[7]

The former Ministry of Communication and Information Society had contracted the World Bank for a Monitoring and Evaluation Manual of this Strategy. This Manual was published in 2016,[8] including a list of indicators and of the public institutions responsible for collecting and evaluating relevant data. No specific reference to disability was made in it. No public information on the funding used for the implementation of the Strategy was identified.

The Romanian National Institute for Research and Development in Informatics published an evaluation of the implementation of the Strategy for the 2015-2019 period. No specific information about its impact on people with disabilities was included. It was found that Romania was still the early stages of achieving the objectives described in the Strategy, having, after an analysis of indicators, poor performance in almost all areas, ranking among the last in comparison to the other Member States of the EU.[9] An update to this study has yet to be published. It is also not clear when will a new Strategy be adopted.

No evidence was identified to suggest people with disabilities were involved in any way in the development or the implementation of this Strategy.

In November 2019, the newly appointed Romanian government initiated a reorganisation, which was, allegedly, partly needed due to an infringement procedure initiated by the European Commission against Romania in the field of cybersecurity.[10] The Ministry of Transport was merged with the Ministry of Communications and Information Society, becoming the Ministry of Transport, Infrastructure and Communications. Moreover, the former Agency for the Digital Agenda of Romania was replaced by a newly created Authority for the Digitalisation of Romania (**"**ADR**"**).[11]

ADR inherited the attributions of the former Agency for the Digital Agenda of Romania, but also some of the attributions of the former Ministry of Communications and of the Information Society.

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7 Romanian Government, (2020), National Strategy on the Digital Agenda for Romania for 2020 (*Strategia Națională privind Agenda Digitală pentru România 2020*), pp. 29-31.

8 Romanian Ministry of Communication and Information Society (*Ministerul Comunicaţiilor şi Societăţii Informaţionale din România*), (2016), Monitoring and Evaluation Manual of the National Strategy on the Digital Agenda for Romania (*Manualul de Monitorizare și Evaluare al Strategiei Naționale privind Agenda Digitală pentru România*), available [in Romanian] at https://www.comunicatii.gov.ro//wp-content/uploads/2016/02/Manual_Monitorizare_Evaluare_v2.0-BM.pdf.

9 E. Tudora et. al, (2020), The analysis of the evolution of DESI and SNADR indicators of the information society (*Analiza evoluției indicatorilor DESI și SNADR ai societății informaționale*), Romanian Journal of Information Technology and Automatic Control, Vol. 30, No. 2, 121-134, 2020, pp. 121-133, available [in Romanian] at https://www.researchgate.net/publication/342641861_Analiza_evolutiei_indicatorilor_DESI_si_SNADR_ai_societatii_informationale.

10 European Commission, (2020), October infringements package: key decisions, 30 October 2020, p. 16, available at https://ec.europa.eu/commission/presscorner/detail/en/inf_20_1687.

11 See Romanian Government, (2020), Decision no. 89/2020 of 28 January 2020 on the organization and functioning of the Authority for the Digitalization of Romania (*Hotărârea nr. 89/2020 din 28 ianuarie 2020 privind organizarea şi funcţionarea Autorităţii pentru Digitalizarea României*), available at http://legislatie.just.ro/Public/DetaliiDocument/223055.

The adoption of the Government Ordinance No. 89/2020, which created and described the functions of ADR, was met with criticism from some public institutions who also have attributions in the field. For example, the Romanian Intelligence Service and the Romanian National Computer Security Incident Response Team ("CERT-RO"), opposed ADR's attributions in the field of cybersecurity.[12] There are however hopes that ADR, with its extended attributions, will have a better chance of implementing a long-term vision, as well as undertaking and finalizing projects that are currently severely under-developed.

ADR is for example in charge of developing a new national Strategy in the field of digitalisation.

The ADR is to attain the following objectives:[13]

(i) the digital transformation of the Romanian economy and society;
(ii) the electronic governance of the public administration in Romania; and
(iii) reaching the objectives set for Romania by the European Union in its financial aid programmes, within the ADR's domains of competence.

In meeting its objectives, the ADR's has a wide variety of attributions and responsibilities related to:[14]

- creating and implementing strategies, plans and policies concerning the following lines of action, such as a new national strategy for digital transformation and the national plan for citizen's digital skills;
- reporting to the Government on the progress of digitalisation in Romania, as well as to the European Commission on the compliance of public authorities' websites and mobile applications with the EU requirements regarding accessibility to such for people with disabilities;
- representation in international cooperation organisms and liaising with EU institutions;
- promoting advanced technologies;
- regulation, supervision and control, including initiating standards, technical norms and guidelines;
- managing programmes and projects, liaising with the civil society and academia for public-private partnerships and other projects of common interest.

ADR is expected to develop the following public systems:

(i) the e-governance system;

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[12] A. Popescu and F. Stefura, (2020), Romanian Digitalization Agenda - the Government takes one step forward by setting up the Authority for the Digitalization of Romania, Lexology, 17 February 2020, available at https://www.lexology.com/library/detail.aspx?g=4d6b4d78-50ca-41ff-af6c-faab94b4e697.

[13] See Romanian Government, (2020), Decision No. 89/2020 of 28 January 2020 on the organization and functioning of the Authority for the Digitalization of Romania (*Hotărârea nr. 89/2020 din 28 ianuarie 2020 privind organizarea şi funcţionarea Autorităţii pentru Digitalizarea României*), available at http://legislatie.just.ro/Public/DetaliiDocument/223055.

[14] See Romanian Government, (2020), Decision No. 89/2020 of 28 January 2020 on the organization and functioning of the Authority for the Digitalization of Romania (*Hotărârea nr. 89/2020 din 28 ianuarie 2020 privind organizarea şi funcţionarea Autorităţii pentru Digitalizarea României*), available at http://legislatie.just.ro/Public/DetaliiDocument/223055.

(ii) the national online tax payment system;
(iii) the national electronic public acquisition system;
(iv) information systems for the electronic issuance of electronic authorizations for international transport of goods and for the electronic assignment of national routes from the transport programmes;
(v) the sole electronic point of contact system; and
(vi) the governmental cloud.

The ADR is tasked to ensure the security of the information systems it operates, as well as their support centre.

ADR published its first report on the activities carried out from February to April 2020.[15] This report included information on a variety of measures taken to digitalise services provided by public authorities, with a focus on the measures taken and support provided during the COVID-19 pandemic. No specific mention was made in relation to people with disabilities.

Meanwhile, ADR is responsible for monitoring and controlling compliance with legislative provisions regarding the accessibility of the websites of public institutions.[16] Emergency Ordinance No. 112/2018 on the accessibility of websites and mobile applications of public sector bodies transposes several obligations which derive from Directive No. 2016/2012 of the European Parliament and of the Council of the European Union. The Ordinance has taken over from the Directive the types of information to be made available by websites and accessibility procedures. The standards for accessing these websites are not, for now, mandatory for all public institutions.

ADR is also the administrative authority in relation to the distribution of certain EU Funds and a partner in carrying out certain EU Funded projects. Some of them, which will be described in Section 4.1., are relevant for people with disabilities or refer specifically to them]. It can therefore be concluded that the needs of people with disabilities are being considered in planning and policy making; the practical impact of these considerations is however still minimal.

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

Education

Romania is currently in the process of adopting the Strategy on the Digitalisation of Education in Romania -SMART-Edu. To this end, an online public consultation was

[15] Authority for the Digitalization of Romania (Autoritatea pentruDigitalizarea României), (2020), Report on the Digital Transformation of Romania. February-April 2020 (*Raport pentru Transformarea Digitală a României. Februarie-Aprilie 2020),* available [in Romanian] at https://www.adr.gov.ro/wp-content/uploads/2020/07/Raport-trimestrial_Transformarea-Digital%C4%83-a-Rom%C3%A2niei_1.pdf.

[16] Romanian Government (*Guvernul României*), (2018), Emergency Ordinance No. 112/2018 on the accessibility of websites and mobile applications of public sector bodies (Ordonanța de Urgență nr. 112/2018 privind accesibilitatea site-urilor web și a aplicațiilor mobile ale organisemlor din sectorul public), 21 December 2018, available [in Romanian] at https://lege5.ro/gratuit/gmytimrugeyq/ordonanta-de-urgenta-nr-112-2018-privind-accesibilitatea-site-urilor-web-si-a-aplicatiilor-mobile-ale-organismelor-din-sectorul-public.

carried out from 26 October 2020 to 9 November 2020.[17] It was reported that 574 inputs were submitted, without information being coherently provided in relation to the quality or any other elements related to the provided input.

In any case, a coherent draft of the Strategy[18] has been published for public debate from 18 December 2020 to 15 February 2021.[19] The following are described as priority axes of action in this draft Strategy:

1. Development of digital skills of pupils and students
2. School curriculum for emerging jobs
3. Lifelong digital education
4. Initial and continuous training of teachers for digital education

The draft Strategy makes a variety of references to people with disabilities. It states that for pupils and students with disabilities, especially those with hearing and visual impairments and those who are on the autism spectrum, the COVID-19 pandemic meant the deepening of digital divide, isolation and discrimination.[20] It acknowledges the important of supporting the development of digital skills among all children, including children with disabilities, and it underlines that this must be done while pursuing, in the same time, the promotion of inclusion, diversity and protecting mental health.[21]

Digital training programmes are also supposed to include the development of digital skills
of parents, especially those in rural areas / disadvantaged communities / for families with children with disabilities. Such skills would help parents both to provide for their children and, if necessary, re /qualify for the labour market.[22]

In its operational plan related to the Development of digital skills of pupils and students priority axe of action, the draft Strategy includes, as a specific measure, the development and implementation of accessible digital literacy programmes for students with disabilities (e.g. the use of applications such as Jaws / NVDA for visually impaired students, for applications related to augmentative communication for students with ASD, etc.).[23]

In its operational plan related to the school curriculum for emerging jobs priority axe of action, the draft Strategy includes, as a specific measure, adapting the curriculum specific to the emerging professions to the requirements of students with special educational needs (emerging professions such as digital marketing or digital/library

[17] Smart-Edu, (2020), Online Public Consultation (*Consultare publică online),* available [in Romanian] at https://www.smart.edu.ro/home/consultare-public%C4%83-online#h.w2k8bymh6ik6.
[18] Ministry of Education and Research, (2020), Strategy on the Digitization of Education in Romania - SMART-Edu. Document for public consultation from 18 December 2020 to 15 February 2021 (*Strategia privind Digitalizarea Educației in România -SMART-Edu. Document în consultare publică în perioada 18 decembrie 2020 – 15 februarie 2021*), available [in Romanian] at https://www.edu.ro/sites/default/files/SMART.Edu%20-%20document%20consultare.pdf.
[19] Smart-Edu, (2020), Strategy- Public consultation (*Strategie- consultare publica),* available [in Romanian] at https://www.smart.edu.ro/home/strategie-consultare-public%C4%83.
[20] Ministry of Education and Research, (2020), p. 21.
[21] Ministry of Education and Research, (2020), p. 21.
[22] Ministry of Education and Research, (2020), p. 21.
[23] Ministry of Education and Research, (2020), p. 22.

editing, professions that can be easily adapted for people with hearing impairments, with ASD or physical disabilities).[24]

Furthermore, the draft Strategy states that understanding technology requires a critical approach to potential issues related to ethics, sustainability of the environment, data protection and confidentiality, children's rights and discrimination, including discrimination on the basis of gender, disability and race. Thus, formal education must be complemented with non-formal education in partnership with libraries, industries and research institutions.[25]

It is also acknowledged that despite the active measures adopted by Romania to increase the employment rate of people with disabilities, there are still major discrepancies in comparison to the employment rates in other states. A large proportion of people with disabilities which could be integrated into the labour market fail to find a job, one of the causes being their low level of basic skills and employability skills, which are not related to their support needs.[26]

In its operational plan related to the Lifelong digital education priority axe of action, the draft Strategy includes a special section related to supporting people with disabilities in the development of skills basic and advanced digital. The proposed measures to offer such support are the following:[27]

- developing a national structure in the form of an innovation hub for research and development, funded by European funds, in partnership with private entities and relevant authorities; this hub would ensure the accessibility of educational technologies for people with disabilities;
- opening an annual business incubator competition that would provide full funding for at least 10 projects aimed at ensuring the accessibility of educational technologies; these projects would be implemented at the level of the Romanian educational system, within the training programmes carried out through community lifelong learning centres or in an open system, for any Romanian citizen;
- creating a national monthly scholarship programme for 12 months, through which at least 1 000 people with disabilities who want to develop advanced digital skills would be awarded monthly grants of EUR 150;
- exchanging experiences on good practices at the European level in the field accessibility of educational technologies for people with disabilities to provide access to all European citizens to the projects developed within the Romanian incubator.

The necessity to create digital educational content is explored, with a specific observation being made on the desirability to create a digital lesson platform adapted to the needs of students and teachers with disabilities.[28] No further details are provided about how this inclusiveness would be achieved.

[24] Ministry of Education and Research, (2020), p. 37.
[25] Ministry of Education and Research, (2020), p. 39.
[26] Ministry of Education and Research, (2020), p. 44.
[27] Ministry of Education and Research, (2020), p. 48.
[28] Ministry of Education and Research, (2020), p. 66.

The draft Strategy also acknowledges that the digitalisation of education is a necessity imposed by the permanent technological development. It adds that the minimum digital technological architecture required by educational institutions should aim to ensure that digital education is fair, motivating, relevant, inclusive and does not marginalize children from disadvantaged backgrounds or those with disabilities.[29]

The draft Strategy identifies a need to set up an online learning centre in each higher education institution, to carry out specific activities, including the implementation of assistive technologies to facilitate participation in online education for students with disabilities.[30]

The initiation of a Strategy on the Digitalisation of Education in Romania is to be welcomed. It has been reported that more than 1 200 people, 72 experts, 24 civil society organizations and 18 companies with relevance in the field of digitalisation contributed to its elaboration.[31] While it is not clear to what level people with disabilities themselves were involved in the elaboration of this Strategy, organisations who carry out activities in the disability rights field were. Given the above detailed considerations, it is evident that careful consideration was given to the specific needs of people with disabilities.

The Strategy does have certain weaknesses that can be easily identified. It seems to focus more on the needs of people with certain types of disabilities, mentioning specifically only physical disability, hearing impairments and ASD. It also mostly addresses access to online education, disregarding, to a certain extent, the possibility to use digitalisation to promote inclusion in the community and physical participation to courses. Moreover, when providing examples of jobs to which people with disabilities could aspire, the Strategy mentions only low-skilled professions. Regarding funding, the Strategy relies heavily on EU Funds, which might raise certain risks in relation to the willingness of national authorities to invest adequately in the digitalisation of education, ensuring the feasibility and sustainability of projects and measures.

That being said, an adequate assessment of this Strategy is somehow futile at this moment in time, as the final draft of the Strategy has yet to be published and it is not clear when it should be adopted. Moreover, as its implementation has yet to begin, an assessment of how all the principles and measures be applied in practice cannot be done.

Urban policy

Romania is currently in the process of adopting its first Urban Policy, which is being elaborated within a project co-financed from the European Social Fund through the Operational Programme Administrative Capacity 2014-2020. Public commitment has been made that the rights of people with disabilities will be taken into consideration in

[29] Ministry of Education and Research, (2020), p. 60.
[30] Ministry of Education and Research, (2020), pp. 64-65.
[31] Cosmin Pirv, (2020), The Strategy on the Digitalization of Education in Romania launched for public debate until 15 February 2021 (*Strategia de Digitalizare a Educaţiei din România lansată în dezbatere publică până în 15 februarie 2021*), Mediafax, 20 December 2020, available [in Romanian] at https://www.mediafax.ro/social/strategia-de-digitalizare-a-educatiei-din-romania-lansata-in-dezbatere-publica-pana-in-15-februarie-19798518.

this process,[32] during which digitalisation and digital transformation could be considered. Being at a very incipient phase, an assessment of this policy cannot be made at this stage.

[32] See Liviu Ploieșteanu, Adviser for the Ministry of Regional Development and Tourism, presenting the project within the National Accessibility Forum, an online event organised on 5 May 2021, available at https://www.facebook.com/gies.ngo/videos/366112641485936; for more information see the web platform launched within the project at https://citadini.ro/.

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 current national disability strategy is the National Strategy 'A society without barriers for people with disabilities', 2016- 2020.[33] This Strategy mentions digitalisations only once, making reference to an issue that was already referred to in this report: the necessity to optimize institutional processes so that the procedure relating to accessing benefits and social services is simplified. The Strategy also underlies the necessity to use digitalisation to gather information in real time, information that can be easily accessed and used by central authorities.[34]

These issues have been since 2016 addressed through, by example, the ongoing project on the creation of the National Disability Management System, described in Section 4.1. of this Report.

In any case, Romania is currently in the process of adopting another national strategy, which will replace this one. Its draft has been open for public consultation from 31 March 2021 to 9 April 2021 and is in the process of being adopted. It is called the 2021-2027 National Strategy on the rights of persons with disabilities.[35]

While not particularly mentioning the word `digitalisation`, this Strategy has, as one of its objectives, improving access to information and communication for people with disabilities. It underlines the importance to use alternative methods and means of communication and assistive technologies, customized according to the abilities of people with disabilities, which shall include sign language interpretation or Braille writing, text readers, sound signals, specific icons and signs and voice commands.[36]

It also mentions the importance of ensuring to information and communication for people with disabilities within the justice system,[37] on the labour market[38] and in relation to education.[39] The Strategy underlines that people with disabilities encounter severe obstacles in accessing assistive technologies, given that for many such purchases no financial support is awarded, that their prices are high and that the number of manufacturers and distributors of assistive devices and technologies is very small, given that there is no national policy on assistive products and technologies.

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33 Romanian Government, (2016), National Strategy 'A society without barriers for people with disabilities', 2016- 2020 (*Strategia nationala "O societate fr bariere pentru persoanele cu dizabiliti", 2016-2020*), available [in Romanian] at http://anpd.gov.ro/web/wp-content/uploads/2016/09/MO-nr-737Bis-din-22-septembrie-2016.pdf.

34 Romanian Government, (2016), p. 33.

35 Ministry of Labour and Social Protection, (2020), 2021-2027 National Strategy on the rights of persons with disabilities -Draft (*Strategia națională privind drepturile persoanelor cu dizabilități 2021-2027- proiect*), available [in Romanian] at https://mmuncii.ro/j33/images/Documente/MMPS/Transparenta_decizionala/31032021_anexa_1_SND.pdf.

36 Ministry of Labour and Social Protection, (2020), p. 10.

37 Ministry of Labour and Social Protection, (2020), p. 6.

38 Ministry of Labour and Social Protection, (2020), p. 21.

39 Ministry of Labour and Social Protection, (2020), p. 30.

The Plan of Action[40] proposed to go hand in hand with the Strategy provides, as a specific measure, the simplification and digitalisation of the process of accreditation, licensing and re-licensing of social services.[41]

It also provides for the promotion of a law proposal on amending the electoral legislation, so that the threshold of necessary voters with disabilities which would award a right to deduct related expenses would be lowered to 1 %; it adds that the list of deductible expenses should include expenses related to specific needs of people with disabilities, such as a mimetic-gestural interpreter, assistant staff and/ or assistive technologies.[42] This is likely to have a direct impact on the number of people with disabilities voting, or at least their consideration of exercising their right to vote and the difficulties they might encounter. In a recent study it was found that among those with severe disabilities, 38 % reported encountering barriers to voting in the 2019 presidential election, compared to 7 % for people with some limitations and 7 % without limitations. Among the barriers, the most frequently encountered are the inability to travel to the polling station, the physical inaccessibility of the polling stations and the complex procedures in place for requesting mobile ballot boxes.[43]

The Plan of Action also provides for the necessity to extend the list of assistive technology related products for which expenses can be deducted from the state budget. This list should be extended to all the 50 products and technologies identified by WHO as a global priority in 2016.[44]

While this has yet to happen, this Strategy and its Plan of Action are very likely to be adopted in the following months. Given the description of the relevant provisions, as detailed above, digitalisation does not constitute a priority of this Strategy. Specific measures are proposed mainly to ensure more access to assistive technologies and to deal with the licensing procedure of social services.

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

Electronic communications

In recent years progress has been seen in the field of electronic communications in terms of accessibility for people with disabilities. Decision No. 160/2015 on establishing measures addressed to final users with disabilities, a Decision issued by the National Authority for Administration and Regulation in Communications, amended most recently in 2019,[45] establishes a series of measures for providers of electronic

[40] Ministry of Labour and Social Protection, (2020), Implementation plan of the 2021-2027 National Strategy on the Rights of Persons with Disabilities (*Plan de implementare a Strategiei naționale privind drepturile persoanelor cu dizabilități, 2021-2027),* available [in Romanian] at https://mmuncii.ro/j33/images/Documente/MMPS/Transparenta_decizionala/31032021_anexa_2_PO.pdf.

[41] Ministry of Labour and Social Protection, (2020), p. 33.

[42] Ministry of Labour and Social Protection, (2020), p. 63.

[43] Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în România*), p. 39, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

[44] Ministry of Labour and Social Protection and the World Bank, (2020), p. 30.

[45] National Authority for Administration and Regulation in Communications (*Autoritatea Naţională pentru Administrare şi Reglementare în Comunicaţii*), (2020), Decision No. 160-2015 on

communications services aimed to facilitate the access of users with disabilities to telephone and internet services. Thus, this Decision specifies the conditions to be met in relation to the marketing of adapted service packages, the purchase and testing of equipment, recommended prices, the minimum speed of internet connections and other technical standards.

The Decision states, for example, that the providers of phone and internet services have the obligation to ensure to persons with disabilities, free of charge, the possibility to test equipment in order to see if it meets their needs, prior to purchase. Relevant information must be provided, if necessary, in printed form.[46] Moreover, the providers have an obligation to create on their webpages a section dedicated to people with disabilities, visible on the main screen, which shall include complete, accurate, easily accessible, relevant, up-to-date, intelligible information that allows easy access to at least: the offers available to people with disabilities, the specific equipment for electronic communications; any conditions or formalities that end-users with disabilities must meet in order to benefit from the offer of products and services adapted to them; and the contractual conditions for the provision of services or other informative materials of interest for persons with disabilities.[47]

Moreover, providers have to ensure for people with disabilities the possibility to address any requests or complaints, including through a designated person, by telephone and by email; these requests and complaints will be dealt with priority. Access to customer services will have to be ensured in a manner that accommodates the needs of all people with disabilities.[48]

The decision also provides guidance in relation to the pricing and type of services that need to be made available for people with disabilities. It states for example that providers needs to make available for end-users with hearing and/or speech difficulties packages containing at least unlimited internet traffic, at a maximum data transfer rate for download of at least 30 Mbps or, where this is not technically possible, the maximum speed offered commercially to individual users, against a recommended tariff of maximum 7 euro/month, including VAT; for visually impaired end-users they must offer packages containing at least 350 national minutes per month for a maximum recommended rate of EUR 3 / month, including VAT, and, at the user's request, unlimited monthly internet traffic for a recommended rate of maximum 7 euro/ month, including VAT, the total recommended tariff of the package being of maximum EUR 10 / month, including VAT.[49]

No official evaluation of the achievements and obstacles encountered during the implementation of this Decision appears to have been carried out. It can be however stated that the provisions are aimed at ensuring the inclusion of people with disabilities and were likely to have had a positive impact on their access to such services.

establishing measures addressed to final users with disabilities (*Deciza nr. 160-2015 privind stabilirea unor măsuri adresate utilizatorilor finali cu dizabilităţi*), 23 February 2015, available [in Romanian] at https://lege5.ro/gratuit/gu3tinjsga/decizia-nr-160-2015-privind-stabilirea-unor-masuri-adresate-utilizatorilor-finali-cu-dizabilitati.

46 National Authority for Administration and Regulation in Communications (2020), Art. 5.

47 National Authority for Administration and Regulation in Communications (2020), Art. 6.

48 National Authority for Administration and Regulation in Communications (2020), Art., 7.

49 National Authority for Administration and Regulation in Communications (2020), Art. 9.

4 Promoting disability inclusion through funding, education and training

4.1 How funding promotes disability-inclusive digitalisation and digital transformation

While a coherent vision of integrating a disability perspective in the funding and the development and roll out of digitalisation and digital transformation, several relevant funding schemes have been identified. They will briefly be presented below.

The National Disability Management System

The National Authority for the Rights of Persons with Disabilities, Children and Adoptions (ANDPDCA), in partnership with the Authority for the Digitalisation of Romania and the Ministry of Labour and Social Justice, are currently implementing a project on the National Disability Management System.[50]

The general objective of the project is to develop and implement a centralized national platform for the collection, storage and distribution of information on people with disabilities (adults and children) to central and local public authorities, individual beneficiaries and institutional partners. The information registered in the new system will make it possible to follow centrally some aspects that contribute to the process of deinstitutionalization and de-bureaucratization; the activity of citizens will be monitored online, through an interconnected system of relevant institutions. The information flow will therefore ensure the correctness of the payment of social benefits and will thus reduce the risk of errors and fraud. This system will manage the documents of the files of people with disabilities, with a reduced need for physical contact.

This is aimed at supporting people with disabilities dealing with paperwork and ensure simplified and adequate access to social benefits. Accessibility requirements are at the forefront of this project.

The project was initiated on 11 July 2019 and is supposed to be completed on 11 June 2021. Regarding its funding, the total value of the project is of approx. RON 45 million (EUR 9.15 million), of which RON 38 million (EUR 7.7 million) come from the European Regional Development Fund, through the Operational Programme Competitiveness and RON 7 million (EUR 1.45 million) come from the state budget.[51]

No information on the stage of the implementation of this project has been made available.

EU Funds to support the Digitalisation of Small and Medium Enterprises (SMEs)

The digitalisation of SMEs is being supported under priority axis 2, investment priority 2b - Development of ICT products and services, e-commerce and ICT demand, action

[50] Authority for the Digitalization of Romania (*Autoritatea pentru Digitalizarea României),* (2020), The National Disability Management System (*Sistem Național de Management privind Dizabilitatea),* available at https://www.adr.gov.ro/sistem-national-de-management-privind-dizabilitatea/.

[51] Authority for the Digitalization of Romania (*Autoritatea pentru Digitalizarea României),* (2020), The National Disability Management System (*Sistem Național de Management privind Dizabilitatea),* available at https://www.adr.gov.ro/sistem-national-de-management-privind-dizabilitatea/.

2.2.2 "Digitalisation of SMEs" under the Competitiveness Operational Programme 2014-2020.

Funds were made available under this scheme starting with 22 December 2020. They are available until the allocated budget is exhausted, but not later than 31 December 2021. Payments are to be made until 31 December 2023.[52] ADR is the administrator of this scheme.

The value of the scheme is EUR 100 million (EUR 84.5 million EU contribution from the European Regional Development Fund and EUR 15.5 million national contribution.[53] From this budget, SMEs can receive non-reimbursable grants ranging from EUR 30 000 to 100 000.

These grants can cover up to 90 % of their expenses, which means that the beneficiaries of the grants will have to insure the remaining 10 % of the eligible expenses plus the ineligible expenses from the projects. It is estimated that up to 3 333 SMEs will be awarded funds under this scheme.[54]

Eligible expenses include procurement of PC systems, related devices and equipment, programmes, cloud services, software as a service, databases, web domain names, new website, hosting services, software automation, RPA (robotic process automation), networking etc. A specific mention is made to the fact that, among the eligible expenses, expenses related to the purchase of specific computer applications for people with disabilities are included. No accessibility requirements are imposed, as a general rule, to those applying for such funds. No information was available, at the moment of the finalisation of this report, in relation to the projects which had received funds under this scheme.[55]

Funding for assistive technology

The National Authority for the Rights of Persons with Disabilities, Children and Adoptions (ANDPDCA), in partnership with the National Agency for Employment, is currently implementing the project “Facilitating the insertion on the labour market of people with disabilities”, project co-financed within the Human Capital Operational Programme 2014-2020.[56]

The project included carrying out a campaign to inform potential users about the available and the advantages of purchasing assistive products. Moreover, vouchers of up to EUR 5 000 are awarded to people with disabilities fulfilling the following requirements: they have a disability attested by a certificate; they are unemployed and are currently searching for a job and are aged 18-65 years old.

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52 Ministry of European Funds and the Authority for the Digitization of Romania (*Ministerul Fondurilor Europene și Autoritatea pentru Digitalizarea României*), Minimis aid scheme of 8 December 2020 (*Schemă de ajutor de minimis din 8 decembrie 2020*), Art. 15, available [in Romanian] at http://legislatie.just.ro/Public/DetaliiDocumentAfis/235528.

53 Ministry of European Funds and the Authority for the Digitization of Romania, Art. 16.

54 Ministry of European Funds and the Authority for the Digitization of Romania, Art. 17.

55 Ministry of European Funds and the Authority for the Digitization of Romania, Art. 14.

56 The National Authority for the Rights of Persons with Disabilities, Children and Adoptions, (2020), Facilitating the insertion of people with disabilities on the labour market (*Facilitarea inserției pe piața muncii a persoanelor cu dizabilități*), Press release, 31 March 2021, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2021/03/Comunicat-presa-Martie-2021-31_03.pdf.

In order to encourage people to purchase these products, ANDPDCA created an infoline opened daily from 12 to 14, published informative videos and provided on a page dedicated to this subject information about available products, distributors of this products, and the procedure related to obtaining the vouchers.[57] No information was available, at the moment of the finalisation of this report, in relation to the number of such vouchers that been awarded.

STEP-HEAR Romania – private initiative, collaborating with private institutions[58]

Step-Hear is a smart solution, created in Israel, that provides guidance for the people with visual impairments. Based on Bluetooth technology and proximity sensors, the step-hear system is able to provide information, in audio format, through their mobile phones, to people with visual impairments, helping them to explore physical space.

The Step-hear application shows the user which objectives are made accessible using the Step-hear system. Whenever the user approaches a step-hear accessible object of interest, they receive instructions on their mobile phone regarding where they are and how they can reach that objective (e.g. building access door, etc.).

The Step-Hear system has been installed in Romania in several locations, through partnerships with private entities, such as malls, as well as public institutions and academic and educational institutions, such as the University of Bucharest, the University of Agronomic Sciences and Veterinary Medicine in Bucharest, the Bucharest City Hall Sector 1[59] and the Cluj Napoca City Hall.[60]

Step-Hear also employs an important number of people with disabilities.[61]

Voices for Hands: Remote Video Interpretation[62]

The project "Voices for Hands: Remote Video Interpretation" is implemented by the National Association of the Deaf in Romania - Bucharest Branch and funded by the Orange Foundation.

The aim of the project is to improve the quality of services of interpretation in sign language in the Romanian deaf community and in its relationship with society through the creation, development and implementation of a remote video interpretation system.

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57 The National Authority for the Rights of Persons with Disabilities, Children and Adoptions, (2020), Facilitating the insertion of people with disabilities on the labour market (*Facilitarea inserției pe piața muncii a persoanelor cu dizabilități*), available [in Romanian] at http://andpdca.gov.ro/w/tehnologia-asistiva/.

58 For more information see http://www.step-hear.com.ro/prezentarea-step-hear/205.

59 For more information see http://www.step-hear.com.ro/ambasadorii-step-hear/288.

60 Step-Hear, (2020), Test Step-Hear in Cluj-Napoca (*Testează Step-Hear în Cluj-Napoca)*, Press Release, 19 February 2021, available [in Romanian] at http://www.step-hear.com.ro/testeaz-step-hear-n-cluj-napoca/32.html.

61 Step-Hear, (2020), Step-Hear is a protected unit (*Step-Hear este unitate protejată)*, Press Release, 19 February 2021, available [in Romanian] at http://www.step-hear.com.ro/step-hear-este-unitate-protejata/31.html.

62 For more information see http://www.vocipentrumaini.ro/site/despre.

The "Voices for Hands" interpretation application is available in web format, as well as a mobile application for "Android" and "iOS" systems. Registered deaf people can request interpretation services by sending a call to all interpreters available on the platform. The first interpreter who accepts the call will enter into audio-video contact with the applicant, interpreting remotely.

The beneficiary has the option to choose one of the predefined interpretation situations (for example, "bank", "post office", "pharmacy", etc.) in order to provide additional information to the interpreter who would accept the cal.

Lumen Glasses for the blind[63]

The lumen glasses offer a system for people who are blind or have severe visual impairments. Founded in 2020 by Romanian engineers, lumen has a team of over 30 engineers, professors, disability experts, designers and scientists who use the latest AI and robotics technologies to enhance the life of the blind.

The system is still in the pre-production phase, but it has already attracted over EUR 1 million in investment funds. Its initiators declared that they are trying to initiate collaboration with public authorities, so that the glasses are offered to the people who need them at a reduced price.

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

Programmes available at universities and other educational facilities for digital professionals were examined while carrying out this research; no element aimed at disability inclusion was identified. There was however identified the private initiative presented below, which might be relevant.

Coding courses for children with hearing impairments

There are a variety of private initiatives of offering free or paid coding courses for children, including children with hearing impairments. Some of them also aim at educating and involving in the education of children digital professionals.

For example, The Dalia's Book Association proposes a free online coding club, called "Code Hero", which will operate son a voluntary basis. The programme mentors are selected among IT professionals and technical faculty students who want to bring change in the lives of children. The programme, initiated in 2020, was initially dedicated to students aged between 9 and 13 in urban and rural areas throughout Romania, including students with hearing impairments. It subsequently extended its target group to children up to 16.[64]

In order to be able to participate in the courses, children need to have access to a computer and internet at home. Volunteer IT professionals are recruited and trained to

[63] For more information see https://www.dotlumen.com/post/glasses-that-aid-the-mobility-of-the-blind.

[64] See https://www.carteadaliei.ro/ and Dalia's Book (*Cartea Daliei),* (2020), Code Hero begins, a coding club for children (*Incepe Code Hero, un club online gratuit de programare pentru copii),* available [in Romanian] at https://ziare.com/scoala/educatie/incepe-code-hero-un-club-online-gratuit-de-programare-pentru-copii-1603369.

actively participate in the implementation of the programme and supporting children online. They teach exclusively online, once a week, for 50 minutes, using the Scratch programming platform and the open-source curriculum Creative Computing resources developed by research groups at MIT and the Harvard University from the United States. The classes are organized through the online platform Google Classroom, and the communication between mentors and students is done by way of video conferences, through Google Hangouts Meet.[65]

A similar initiative, this time aimed solely at children with hearing impairments, is carried out by the Light into Europe Foundation, their project being financed by the Ford Motor Company Fund.[66] The main objective of the project is to start with involving 50 students with hearing impairments, a number which is to be increased in the future. These students are to be supported to develop coding skills, through the Scratch method. The project also aims to train at least 10 teachers and educators in supporting programming sessions. Moreover, the project aims to create an educational resource in sign language with terminology related to the IT sector and programming.

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

Private initiative: The digitalisation of the neuromotor management and recovery process with the help of technology[67]

This Project is being carried out by the Mihai Neșu Foundation, being partially funded by the Vodafone Foundation (RON 170 000 of the total cost of RON 250 000). The project supports the beneficiaries and the employees of the Foundation, by digitalising the management and neuromotor recovery processes, which will allow streamlining workflows, improving case management and increasing the quality of life of children with neuromotor disabilities in the Bihor County and surrounding areas. The project involves streamlining the management process through a platform, specifically created for the Recovery Centre for children with neuromotor disabilities Sfântul Nectarie in Oradea, a platform that can be accessed by employees and parents of the beneficiary children directly from the mobile phone. The platform will keep a digital record of the children's medical history, of their appointments for therapies, of their attendance and cash registers, of stock of consumables, of several types of internal reports and will be an easy means of communication between parents and therapists, which will be updated in real time, being accessible to everyone, from anywhere, through mobile phones.

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65 See https://www.carteadaliei.ro/ and Dalia's Book (*Cartea Daliei),* (2020), Code Hero begins, a coding club for children (*Incepe Code Hero, un club online gratuit de programare pentru copii),* available [in Romanian] at https://ziare.com/scoala/educatie/incepe-code-hero-un-club-online-gratuit-de-programare-pentru-copii-1603369.

66 Gazeta de Sud, (2020), Craiova. The first coding club for students with hearing impairments (*Craiova. Primul club de programare pentru elevii cu deficienţe de auz*), 25 February 2020, available [in Romanian] at https://www.gds.ro/Educatie/2020-02-25/craiova-primul-club-de-programare-pentru-elevii-cu-deficiente-de-auz/.

67 Mihai Neşu Foundation, (2020), The digitialisation of the neuromotor management and recovery process with the help of technology (*Digitalizarea procesului de management și recuperare neuromotorie cu ajutorul tehnologiei),* Press Release, 20 September 2020, available [in Romanian] at https://www.mihainesufoundation.com/ro/centrul-de-recuperare-sfantul-nectarie/proiecte.html.

The project also involves financing the purchase of an endurance and running treadmill equipped with an airwalk fall protection system and a movement support and resistance increase system. The project started its implementation in October 2020.

AMAIS (Association of Alternative Methods of Social Integration)[68]

This Association specializes in ensuring accessibility through architecture and technology. Its team, composed of both people with and without disabilities, provides services related to architecture and design, software development, social assistance, pedagogy and data analysis.

Its purpose is to create an inclusive community and smart cities. The Association was created as a response to a lack of education available for professionals specialised in the services, they are offering in relation to taking into consideration, in their work, the needs of people with disabilities. It therefore created a space where professionals from a variety of fields can meet and contribute to the creation of an inclusive community.

AMAIS provides services which include assessments and reporting on the accessibility of spaces, services, websites and mobile applications. AMAIS carries out a series of projects, such as Senseability. This project is aimed at transforming existing spaces into inclusive social contexts. It transforms existing spaces into socio-cultural platforms, meeting places for people with visual impairments and people without disabilities through a multisensory approach.

SenseAbility wants to implement a multidisciplinary way of approaching the problems faced by people with visual disabilities in the existing urban context. This is done by discovering a space built by using the non-visual senses. Senseability therefore gets visitors of certain spaces to explore the spatial complexity hidden behind the visuals, that has developed a one-sided perspective on space. From a social point of view, the aim is to establish a channel of communication between people with visual impairments and people with no such impairments.[69]

AMAIS also led the distribution of 70 WeWalk smart canes for blind people and people with visual impairments, providing trainings for their users.[70] The services offered by AMAIS are available to all those interested, including private companies and public authorities. In addition, AMAIS also provides such services free of charge, having a rande of private companies funding them.[71]

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

In Section 2.2. of this report process of adopting the Strategy on the Digitalisation of Education in Romania -SMART-Edu was briefly presented. It was underlined that, in its operational plan related to the Development of digital skills of pupils and students priority axe of action, the draft Strategy includes, as a specific measure, the development and implementation of accessible digital literacy programmes for students with disabilities (e.g. the use of applications such as Jaws / NVDA for visually

[68] For more information see https://amais.ro/despre-noi/.
[69] For more information see https://amais.ro/senseability/.
[70] For more information see https://www.facebook.com/AMAis.ro.
[71] For more information see Despre noi - AMAis.

impaired students, for applications related to augmentative communication for students with ASD, etc.).[72]

While there are therefore plans to provide access to such trainings for people with disabilities, it must be underlined that no coherent national practice with such objective was identified. Therefore, below examples can be found of relevant practices across both public and private entities.

Initiatives carried out within universities, aimed at ensuring the inclusiveness of the academic environment

The Office for Students with Disabilities of the Babes-Bolyai University[73]

The Office for Students with Disabilities facilitates and supports the inclusion of students with special educational needs into the academic life, by identifying these needs and by informing the academic personnel about the learning needs of students with disabilities. It promotes values such as care, inclusion, diversity, respect, focus on the individual needs, accessibility and collaboration.

It provides counselling to students with special learning needs and opportunities to volunteer in activities regarding the physical and social accessibility of the academic environment (learning, evaluation), as well as of other spaces related to the social activity of students, including the students with special needs.

It also constitutes a point of contact for those searching to collaborate with centres, NGOs and institutions that are offering information and services related to accessibility, medical support, vocational training and/or training of several skills for helping and caring for persons with disabilities.

The Office collaborates with private entities and association specialised in providing support to people with disabilities.[74] As an example, it collaborates with the Centre for Assistive Technology and Access.

Support for students with disabilities within the Tibiscus Faculty of Computers and Applied Informatics[75]

The Faculty of Computers and Applied Informatics organizes its activity in such a way as to ensure equal opportunities for people with disabilities regarding admission and participation in studies, as follows:

- ensures the participation in admission and in all activities of persons with disabilities,
- provides continuous logistical support for people with disabilities, consisting of auxiliary materials, equipment and adapted curriculum, as appropriate;
- ensures or allows the presence of support teachers or allows the presence of companions during activities, as appropriate.

[72] For more information see Despre noi - AMAis, p. 22.
[73] More information available at http://bsd.centre.ubbcluj.ro/for-students/.
[74] More information available at http://bsd.centre.ubbcluj.ro/resources-and-collaborators/.
[75] Tibiscus University, General information, available [in Romanian] at http://fcia.tibiscus.ro/info-studenti/admitere2018/.

Similar initiatives have been identified at other universities, such as the Hyperion University in Bucharest[76] and the West University from Timişoara.[77]

Quality inclusive education within the academic community of the University of Bucharest[78]

The University of Bucharest implements a series of measures for the inclusion of people with disabilities - students, professors and administrative staff - through a project entitled "Quality inclusive education within the academic community of the University of Bucharest, with a focus on people with disabilities", funded by the Ministry of Education and Research through the Institutional Development Fund (FDI).

Changes will be carried out for the accessibility and modernization of the access infrastructure in the spaces of the University. At the same time, efforts will be made to expand the guidance system with step-hear technology for people with visual impairments. The project also provides interventions for the accessibility of educational and residential spaces for students with disabilities. An important dimension aims to increase the university's capacity to provide visually impaired students with access to quality information and education through the purchased technologies and assistive software. Also, starting with the academic year 2020 - 2021, the University of Bucharest provides students with new accessible educational resources. Students with disabilities will be able to benefit from counselling, career guidance and mentoring sessions, supported by specialists in the field. Last but not least, a network of student volunteers will support young people with disabilities in accessing the administrative and educational services provided by the university.

Through public debates, the project team aims to bring up issues such as ensuring free and equal access to quality education, promoting diversity and inclusive education, respecting human rights and ensuring the well-being of all beneficiaries of education and training services.

Private initiatives, aimed at supporting people with disabilities in continuing their studies

Google scholarships for students with disabilities[79]

Students with disabilities who are passionate about technology can sign up for Google scholarships. They would receive a yearly EUR 7 000 stipend. Applications were opened to students enrolled in an accredited university institution in Europe, wanting to study computer science, IT engineering, computers, or similar fields.

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[76] Hyperion University, Support for students with disabilities (*Sprijin studenţi cu dizabilităţi*), available [in Romanian] at https://www.hyperion.ro/structura-si-organizare/sprijin-studenti-cu-dizabilitati.

[77] West University of Timişoara, Accesibility for Students with Disabilities (*Accesibilitate pentru studenţii cu dizabilităţi),* available [in Romanian] at https://admitere.uvt.ro/student-la-uvt/accesibilitate-pentru-studentii-cu-dizabilitati/.

[78] Bursa, (2020), University inclusion for people with disabilities (*Incluziune universitară pentru persoanele cu dizabilităţi)*, 15 July 2020 available [in Romanian] at https://www.bursa.ro/sanse-egale-incluziune-universitara-pentru-persoanele-cu-dizabilitati-43640047.

[79] StartupCafe, Google scholarships for students with disabilities (*Burse Google pentru studenţii cu dizabilităţi*), available [in Romanian] at https://www.startupcafe.ro/afaceri/bursa-studenti-dizabilitati-google.htm.

Initiatives targeting specifically blind people and people with hearing or visual impairments

Private initiatives, with public institutions as collaborators – BLINDHub[80]

The project BLINDHub is to be carried out by the Association of the Blind in Romania and the University of Bucharest. The project started in 2020 and is to be carried out up until 2022, aiming at meeting the needs of over 50 000 people, including people with visual impairments, in the context of the digitalisation trend and the growing demand among well-trained human capital employers. The BLINDHub project is funded by the Orange Foundation with the amount of EUR 482 000 (EUR 86 000).

BLINDHub has a national coverage and aims at creating at mobile application which will facilitate the access for people with visual impairments on the labour market and in academia.

The main component of the project is the mobile application in which beneficiaries will be able to create, for free, a complete professional profile based on a video CV. Interested companies will have the opportunity to filter the database and send interview requests directly to candidates. The CV video material will be made with the support of the project team within the 2 BLINDHub centres in Bucharest or in the country, during the events organized in 5 big cities, in order to promote the benefits of the application, both among employees and employers.

Access to libraries for blind people and people with visual impairments

There are several initiatives in Romania to ensure access to people with visual impairments to libraries, which contributes to their access to education. For example, libraries can use Biblionet Romania to provide people with visual impairments access to its services. Biblionet Romania is programme which includes the provision of services such as a voice recognition software and other specialized digital tools such as email, search engines, music online, chat and radio broadcast accessible for people with visual impairments.[81]

A similar initiative is being carried out since 2013 by the National Romanian Library, within the project The Sounds of the Pages.[82]

Coding courses for children with hearing impairments

This initiative is similar to *Code Hero,* a project briefly presented in Section 4.3. This initiative is aimed solely at children with hearing impairments and is carried out by the Light into Europe Foundation, their project being financed by the Ford Motor Company

[80] The Romanian National Council for Disability (*Consiliul Naţional al Dizabilităţii din România),* (2020), BLINDHub, the first mobile application that will contribute to the professional integration of people with visual impairments (*BLINDHub, prima aplicație mobilă ce va contribui la integrarea profesională a persoanelor cu deficiențe de vedere),* 30 octomber 2020, available [in Romanian] at https://jurnal-social.ro/blindhub-prima-aplicatie-mobila-ce-va-contribui-la-integrarea-profesionala-a-persoanelor-cu-deficiente-de-vedere/.

[81] Romanian Government, (2020), National Strategy on the Digital Agenda for Romania for 2020 (*Strategia Națională privind Agenda Digitală pentru România 2020*), p. 76.

[82] For more information see http://www.bibnat.ro/Sunetul-paginilor-s312-ro.htm.

Fund.[83] The main objective of the project is to start with involving 50 students with hearing impairments, a number which is to be increased in the future. These students are to be supported to develop coding skills, through the Scratch method. The project also aims to train at least 10 teachers and educators in supporting programming sessions. Moreover, the project aims to create an educational resource in sign language with terminology related to the IT sector and programming.

Initiatives aimed at supporting life-long educational training

Distance learning courses[84]

The Tîrgovişte University concluded an agreement with a day care centre for people with disabilities in order to encourage its beneficiaries to enrol in education. 12 people consequently started attending bachelor courses in Mathematics and Informatics, receiving support from the team resulted from the collaboration of the two institutions.

Without carrying out an exhaustive and through assessment of such initiative, we can notice most of them target young people with disabilities, with less opportunities being available in relation to life-long training, moreover, measures aimed at supporting people with hearing and/or visual impairments and people with physical disabilities are more widely spread and have been in place for longer periods of time; the measures proposed to support people with intellectual and psychosocial disabilities are still in an incipient phase when it comes to digitalisation and digital transformation.

[83] Gazeta de Sud, (2020), Craiova. The first coding club for students with hearing impairments (*Craiova. Primul club de programare pentru elevii cu deficienţe de auz*), 25 February 2020, available [in Romanian] at https://www.gds.ro/Educatie/2020-02-25/craiova-primul-club-de-programare-pentru-elevii-cu-deficiente-de-auz/.

[84] IGJ, (2014), Faculty for people with disabilities (*Facultate pentru persoanele cu handicap*), available [in Romanian] at https://www.igj.ro/social/facultate-persoanele-handicap.html.

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

Digitalisation and digital transformation did not yet gain priority in the agenda of non-governmental actors traditionally fighting for the rights of people with disabilities. An exception might be access to assistive technologies, which have always had priority for the organisations promoting the rights of people with physical disabilities. This lack of prioritisation of digitalisation and digital transformation might relate to the fact that people with disabilities still face a significant range of more traditional human rights violations, in relation to which organisations promoting their rights already have expertise and experience; this is expected to change, as funds are being made available in related to digitalisation and the opportunities offered by digitalisation will become more widely known.

For nor, from the discussions that do exist, corroborated with the ideas promoted by new organisations and entities that were born and are more interested in technological developments, potential opportunities did arise. They most commonly refer to one of the following areas:

1. *Web accessibility and access to online services, particularly those services made available online by public institutions*

A growing range of basic services tend to be transferred online, a process accelerated by the constraints of interaction in the physical environment imposed in the context of the COVID-19 pandemic. This can be perceived as an opportunity for people with disabilities if measures are taken to ensure their access to such services. Such measures need to be adapted to different levels of support needs.

2. *Transportation and physical accessibility*

People with disabilities often face obstacles when trying to use public transport to travel within or between villages/towns/cities. Certain measures were taken to alleviate this problem, such as measures related to physical accessibility and providing free tickets for people with disabilities.[85]

However, in order to offer such benefits, private companies need to firstly conclude agreements with local authorities. The lists of these companies are not comprehensive and are not created taking into consideration the travel itineraries, schedules and the support needs of people with disabilities.

There is therefore a lack of systematic information, easily accessible online, both on the supply of accessible routes and on the demand for accessible transport services; this makes planning difficult both for providers of transportation and for people with disabilities. On the one hand, the lack of information provided by transport operators

[85] Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în România*), pp. 63-66, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

on issues such as the availability of accessible routes, their capacity and waiting times make it difficult for people with disabilities to plan and, as a consequence, reduces demand. On the other hand, for operators to plan how services are to be provided and what reasonable accommodation must be provided, they need information on when such services are needed, how many people need them and what support needs these people have. No such information is gathered or made available to them.[86] These issues could be addressed through the use of electronic systems and tools available online.

In addition, more and more attention is awarded, to using application to support people with visual impairments in their daily activities carried out within the community, in rural and urban areas, in relation to private or public services.

3. *Coherence of the regulation, provision and monitoring of social services*

In Romania, there are a variety of instruments to be used in ensuring access to social services for people with disabilities living in the community and for people with disabilities who are institutionalised. There are several problems in relation to the manner these instruments are being used and to the manner of gathering data and information which should transpose into an efficient provision of services.

To take a few examples, according to an assessment carried out in 2020, while there are some tools standardized at national level for the provision of social services, given that there is no specific methodology for their use and monitoring, there are different practices at the county level, which results in disparities at the national level. Case management for adults with disabilities is provided for in the legislation, but the manner in which is to be carried out is provided in details only for people who live in residential centres.[87]

Although the collection of data on persons with disabilities is extensive, the subsequent statistical use of these data is practically non-existent, given that there is no aggregation mechanism to produce relevant information on the situation of persons with disabilities at national level.[88] There is also no systematic monitoring of the situation of services for people with disabilities.

There are also problems with the evaluation of the quality of provided social services and with their accreditation a re-accreditation. For example, in order, to obtain accreditation, a provider of social services for people with disabilities should have a minimum of 30 documents in paper or electronic format. It would therefore highly recommended that this procedure by digitalised and simplified and that information be gathered in a consolidated form, in a common database used by central and local authorities.

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86 Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în România*), pp. 63-66, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

87 Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în România*), pp. 162-172, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

88 Ministry of Labour and Social Protection and the World Bank, (2020).

The National Disability Management System, presented in section 4.1, was created to deal with these issues. On one side there is this assessment, which was carried out in 2020, when the project on the System was in its initial phase of implementation. On the other side, there is no publicly available information on the stages of the implementation of the project. Therefore, an assessment of its impact cannot be made at this stage. What can be said for certain is that digitalisation and digital transformation can have an important positive impact on the provision of social services.

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

According to Eurostat, in 2019 43 % of Romanians aged 16-74 had low digital skills, this being the highest percentage registered in the European Union. Only 10 % of the population had superior digital skills, making Romania the worst, from this point of view, from the EU.[89] One fifth of Romanians have reportedly never used the internet.[90] The digital skills are usually better and cities and from worse to significantly worse in towns and suburbs and in the rural areas.[91] This data is relevant for people with disabilities as well.

People with disabilities have a lower probability to access information and services available online, with such access being even more difficult for people with high level support needs. It was found that most people with disabilities in Romania do not use the Internet to access information and services, and of those who do use it, a significant proportion experience difficulties.[92] Even during the COVID-19 pandemic, when online access to services became even more important, most people with disabilities in Romania were found not have used the internet in the previous month; this rate was of 50 % among people with some level of impairment and of 60 % for people with severe disabilities. Moreover, people with disabilities living in rural areas had it even worse; so did people with disabilities aged over 65.[93]

In relation to access to information and services provided online by public institutions and other actors, a 2020 accessibility control campaign conducted in Romania, only 3 out of 1 441 public institutions assessed had taken measures to ensure the accessibility of the services provided online for people with disabilities. Moreover, only

89 Eurostat, (2019), *Eurostat regional yearbook 2019 edition*, pp. 140-141, available at https://ec.europa.eu/eurostat/documents/3217494/10095393/KS-HA-19-001-EN-N.pdf/d434affa-99cd-4ebf-a3e3-6d4a5f10bb07?t=1574339587000.

90 European Commission, (2020), Digital Economy and Society Index (DESI). 2020 Romania, p. 3, available at https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66928.

91 Eurostat, (2019), *Eurostat regional yearbook 2019 edition*, pp. 140-141, available at https://ec.europa.eu/eurostat/documents/3217494/10095393/KS-HA-19-001-EN-N.pdf/d434affa-99cd-4ebf-a3e3-6d4a5f10bb07?t=1574339587000.

92 Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în România*), pp. 57-63, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

93 Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în România*), pp. 57-63, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

in 32 % of the 1 544 public institutions assessed with this purpose had a person designated to assist people with disabilities.[94]

Taken this into consideration, the opportunities created in the realm of digitalisation and digital transformation for people with disabilities can be reduced, with many not being able to enjoy any of the benefits. Therefore, careful consideration needs to be given to the specific, often significant, barriers faced by people with disabilities, as well as to the difficulties related to infrastructure, and not only, faced by the entire population.

[94] Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în România*), pp. 57-63, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

6 Conclusions and recommendations

6.1 Conclusions

One fifth of Romanians have never used the internet. Moreover, most people with disabilities in Romania do not use the Internet to access information and services, and of those who do use it, a significant proportion experience difficulties. Access to online information and services is very difficult, accessibility not being at the moment implemented on a large scale not even among public institutions. Moreover, Romania is ranking the lowest from EU Member States in the number of people having superior digital skills (only 10 %), leading with the highest percentage of people with low digital skills (43 %).

Digitalisation and digital transformation is gaining more and more attention among decision makers and other stakeholders across Romania. The restructured Authority for the Digitalisation of Romania was made responsible, yet again, with ensuring a swift transition to a society where technological development, smart cities and smart planning are customary.

The inclusiveness of this new type of society, by taking into consideration the needs of people with disabilities, appears to have been trending among decision makers. This trend was however not consistent, nor overarching. Proposed objectives and measures are scattered across strategies, plans of action and ongoing projects.

Romania might soon start working on a new national digital strategy. It is currently adopting a Strategy on the Digitalisation of Education in Romania -SMART-Edu and replacing the old national disability strategy with the 2021-2027 National Strategy on the rights of persons with disabilities. Projects such as the creation of a National Disability Management System are carried out to address some of the most ardent issues faced by people with disabilities, which can be tackled by digitalisation and digital transformation. These issues include a social services system which is at the moment characterised by incoherence, divergent practices and difficult access. They also relate to failures in ensuring the mobility of people with disabilities and their inclusion in the community. Moreover, the implementation of proposed changes relies heavily on EU Funds.

While on paper and at the commitment level objectives and proposed measures appear reasonable and feasible, assumed obligations were not amended significantly in the past 5 years. Changes in practices have however been minor.

Despite this, opportunities for people with disabilities to benefit from digitalisation and digital transformation do exist. Measures were initiated to ensure web accessibility and access to online services, particularly those services made available online by public institutions. If adequately implemented, the digitalisation of the process could ensure the coherence of the regulation, provision and monitoring of social services.

A digitalised system could also be used to ensure people with disabilities have access to the free local and national transportation available for them according to national laws; people with visual impairments could also highly benefit of the creation of so-called smart cities, which can communicate with them through mobile applications.

Relevant projects, funded through EU Funds, are currently being implemented. They include the creation of a National Disability Management System, support for the digitalisation of companies, support in accessing assistive technologies and the development of an inclusive urban policy. Some of them include certain accessibility related requirements; whenever the target group is people with disabilities, accessibility is required, at least for the specific type as disability addressed by the project. The projects addressing wider groups, such as, for example, that on support for the digitalisation of companies, are unlikely to include general accessibility requirements; such requirement are inherent to the project applications, within this general scheme, which target particularly people with disabilities. There are as well numerous private initiatives aimed at, for example, supporting the creation of inclusive spaces and services. Private entities are developing services, such as mobile applications, to support the mobility and inclusion in the community of people with disabilities. There also scattered initiatives aimed at ensuring the development of digital skills among pupils and students with disabilities, such as support measures at the university level and code courses for children.

There is however little coherence of these practices, particularly at a legislative and policy level. Having no or inconsistent access to funding from the state budget, most of the identified promising practices are facing risk regarding their feasibility and sustainability. People with disabilities therefore end up negotiating individually their participation or remain dependent of assistive services provided by private entities, aimed at particular groups and therefore responding to particular support needs; these are not sufficient to ensure accessibility and the inclusion of all people with disabilities.

In this context, Romania needs to adapt its approach to promotive disability inclusion in the era of digitalisation and digital transformation, creating coherent and sustainable legislative and policy measures, as well as adequate funding schemes to support their implementation.

6.2 Recommendations

The Authority for the Digitalisation of Romania should ensure the disability inclusiveness of the new digital strategy which is to be developed. This strategy should ensure a coherence of adopted measures, across sectors of activity; its implementation must be ensured by providing it with efficient instruments and adequate funding.

The Strategy on the Digitalisation of Education in Romania -SMART-Edu can potentially have a significant impact on promoting the rights of people, and particularly those of children and young people with disabilities. Its speedily adoption and implementation are highly desirable, as is the adoption of adequate instruments and funding which will ensure its practical implementation.

An Accessibility Code should be created by the National Authority for the Rights of Persons with Disabilities, Children and Adoptions in collaboration with the Authority for the Digitalisation of Romania and relevant Ministries (e.g. the Ministry of Labour and Social Protection and the Ministry of Transport, Infrastructure and Communications).[95]

[95] As suggested in Ministry of Labour and Social Protection and the World Bank, (2020), Diagnosis of the situation of people with disabilities in Romania (*Diagnoza situației persoanelor cu dizabilități în*

This Code should take into consideration accessibility requirements as provided in the EU Web Accessibility Directive and the European Accessibility Act; it can be used as an efficient tool to transpose EU legislation in the domestic system. The Code should include elements regarding accessibility for people with disabilities with all types of support needs, in the following areas:

- *Web accessibility and access to online services, particularly those services made available online by public institutions by:*
  - developing a guide for drafting public documents in easy-to-read and easy-to-understand language;
  - a set of standards for the accessibility of online services provided by public institutions;
    - minimum standards for checking and monitoring the accessibility of all websites, including those ensuring access to services, such as ticketing machines, banking and ATMs, e-books, online shopping websites and mobile apps;
  - developing an occupational standard for the recognition of specialists in creating accessible websites or otherwise able to support accessibility for people with disabilities in the process of digitalisation and digital transformation.
- *Transportation, with* elements on ensuring the accessibility of means of transport:
  - a set of minimum standards for the accessibility of means of transport;
  - conditioning the granting of the certificate approval for public transport to complying with the minimum accessibility standards;
  - an obligation of public transport operators to provide online and offline information on accessible and free routes for people with disabilities;
  - sanctions on the refusal of private transport operators to conclude contracts to ensure the free transport of persons with disabilities;
  - an obligation for public authorities to create local and regional assessments for the needs of people with disabilities, taken into account predictable variables and coordination between different local authorities (e.g. ensure wider access to transport means for people with disabilities during summer holidays in the areas located near the see);
  - provisions on the obligation to make accessible services related to public transport services such as computer applications (e.g. online ticket purchase) which accompany transport services.
- *Provision of social services:*
  - simplify and digitalise procedures related to the accreditation and re-accreditation of social services;
  - provide an analysis of the activities carried out within the project on the National Disability Management System and an action plan for the continuation of the project, with the objective to touch upon the deficiencies identified in the provision, monitoring and evaluation of social services.
- *Access to assistive technologies for people with disabilities:*
  - an obligation to collect data related to health and long-term care needs, including those that may be met by assistive technology; this could be used develop evidence-based strategies, policies and programmes;

România), pp. 57-63, available [in Romanian] at http://andpdca.gov.ro/w/wp-content/uploads/2020/12/Diagnoza-situatiei-persoanelor-cu-dizabilitati-in-Romania-2020-RO.pdf.

- minimum standards related to the training of staff and the procurement of equipment, in order to ensure that assistive products are available at all levels of health and social services;
- promote and invest in research, development and product design to contribute to increasing the affordability and availability of assistive technologies.

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