



Digitalisation and digital transformation in Italy

Implications for persons with disabilities

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1 Executive summary

In Italy, Law 4/2004, which contains provisions to facilitate disabled people's access to IT tools, affirms the right of access for people with disabilities to the public administration's IT and telematics services; to structures and services that are open, or provided, to the public through the new information and communications systems and technologies on the internet; and to public utility services, in compliance with the principle of equality pursuant to Article 3 of the Constitution.

The *National Strategy for Digital Skills*, adopted in July 2020 under the remit of the Digital Republic policy initiative, provides for an array of measures to enhance digital skills across various sectors in order to support economic development. Recently, the *National Recovery and Resilience Plan (Piano nazionale di ripresa e resilienza – PNRR)*, has relaunched the country's digitalisation process, and the *Digital Italy 2026 strategy (Strategia Italia digitale 2026)* aims to enhance ultra-fast broadband networks over the entire national territory as a necessary pre-condition to harnessing the benefits of digitalisation, and more generally to fully achieving a digital society.

The *National Strategy for Digital Skills*, adopted in July 2020, takes into account the situation of people with disabilities. In fact, it provides for a digital inclusion path, with measures dedicated to disadvantaged social groups such as the elderly, people with a low level of education and people with disabilities, through the use of easy-to-use tools (such as radio and television) and digital facilitation interventions.¹

Recently, the PNRR has relaunched the country's digitalisation process, taking into account the situation of persons with disability and affirming the need to follow and respect the UNCRPD principles. In the context of a generalized delay in the field of digitalization of services, the health sector is the one on which the PNRR focuses most, underlining the need to implement treatment and monitoring tools that can concretely improve, in a widespread manner in the Country, the health of people with disabilities.

Italy lacks sector-specific disability strategies; the Biennial plans of action on disability, launched in 2013 and 2017, do not contain significant references to digital inclusiveness.

The COVID-19 pandemic makes it evident that persons with disabilities in Italy are still facing digital exclusion, mainly with regard to work and education. Some flaws of the Italian digital architecture have a negative impact on people with disabilities in particular: as an example, the delay in the implementation of a digital e-health system has slowed down their vaccination schedule. At the same time, some technologies (tele-rehabilitation, for example) show great potential to improve the quality of life of persons with disabilities.

Good practices

The COVID-19 pandemic has given an important boost to the digitalisation of health services in Italy, leading to quick investment as part of the emergency response. From

¹ The implementation of the strategy is based on the use of various funds, in particular: 1. funds for innovation in the budget law; 2. funds relating to national and European programs (e.g.: Cohesion Funds); 3. funds available thanks to a renewed collaboration with the Department of the Civil Service.

this point of view, some tele-rehabilitation activities have played a vital role in guaranteeing the right to health of people with disabilities, and in not undermining the progress achieved, especially with reference to disabled children (see section 5.1 of this report).

Some bottom-up experiences seem to be effective at improving digital skills and technological inclusion. The ASPHI Foundation, based in Bologna and active since 1980, promotes the inclusion of people with disabilities in school, work and society through the use of effective digital technologies, involving people with disabilities, their families, public entities, school institutions and the business community.

Recommendations

- Make digital tools accessible, including through the support of assistive technologies, and provide adequate training for the improvement of digital, technical and scientific skills. In this way, people with disabilities can face the changes that have emerged in the labour market and seize the opportunities that these changes offer.
- Italy is trying to overcome the digital divide, promote digital inclusion and strengthen the development of digital skills among citizens. The PNRR provides measures about the strengthening of telemedicine services, in order to reduce the current geographical and territorial gaps in terms of health thanks to the harmonisation of care standards guaranteed by technology; ensure a better care experience for patients; and improve the efficiency levels of regional health systems by promoting home care and remote monitoring protocols. Digital health tools regarding treatment and monitoring have to be accessible and inclusive.
- Build a consistent, inclusive, and long-lasting system of digital education, giving persons with disabilities the necessary tools to be included in a digitalised society and an evolving job market.

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

At the regulatory level, Italy presents a very advanced picture, which has been consolidated by many years of attention to the issue of digitalisation and digital transformation. An important law was approved in 2004 – Law 4/2004.²

Article 1 of the Law is particularly important because, in addition to recognising and guaranteeing the right of every person to access all sources of information and related services, including those that are articulated through IT and telematic tools, it inserts a specific reference to people with disability in the second paragraph, where it states,

‘In particular, the right of access to the IT and telematic services of the public administration, as well as to the structures and services open or provided to the public through the new systems and technologies of information and communication on the network and the services of public utility by people with disabilities, in compliance with the principle of equality pursuant to Article 3 of the Constitution.’

The following year, in 2005, the Digital Administration Code was adopted with Legislative Decree 82/2005,³ which in Article 3 reaffirms the right to use technologies, and also provides, in Article 8 (entitled ‘Digital Literacy’), that the state, regions and local authorities shall promote initiatives aimed at promoting the dissemination of digital culture among citizens, with particular regard to minors and categories at risk of exclusion, and shall promote the development of legal IT skills and the use of digital services by public administrations with specific and concrete actions.

These two fundamental regulatory interventions have been followed by numerous plans, guidelines and strategies, but there has not been the hoped-for implementation, partly due to the problems that characterise the governance of digitalisation.

The first problematic profile concerns the divergence of competencies at a central level, where there is a lack of strong institutional governance capable of defining priorities, coordinating investments and implementing effective and unitary action. It should be noted that even within the current government, led by Mario Draghi, competences on digital matters are entrusted to two different ministers, both without portfolios: the Minister for Technological Innovation and Digital Transition and the Minister for Public Administration (responsible for public digitalisation).

To this problem can be added:

- a) the lack of a common strategy among all public and private actors;

² This law is known as the ‘Stanca Law’, from the name of the then Minister for Innovation.

³ See: <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2005-03-07:82>.

- b) the absence of continuity in planning and action. In recent times, there have been appointments and the creation and cancellation of various bodies, but a single national strategy cannot be perceived.⁴

In December 2019, the Minister for Technological Innovation presented the strategy *Italia 2025*, a five-year plan that puts digitalisation and innovation at the centre of a 'process for the structural and radical transformation of the country'.

The strategy *Italia 2025*⁵ affirms that 'Digital public services should be accessible to everyone, without exception. Otherwise, the risk is that the digital transformation of the country will end up favouring only the most digitally educated and aware citizens and disadvantage the others' – so, nobody can be left behind during the country's digital transformation. Such processes 'should have as their main objective precisely [...] bringing the administration ever closer to citizens, [...]. This goal requires a specific commitment to combat all forms of the digital divide, starting with the cultural ones'.

In July 2020, the Three-Year Plan for IT in the Public Administration 2020-2022 (Piano Triennale per l'informatica nella Pubblica Amministrazione 2020-2022)⁶ was adopted, thanks to the close collaboration between the Agency for Digital Italy (AgID) and the Department for Digital Transformation. Among the guiding principles of the plan is that of guaranteeing inclusive and accessible services; public administrations must design digital public services that are inclusive, and which meet the different needs of people and individual territories.

The plan identifies three priority objectives:

- a) Promote the development of a digital society, where services put citizens and businesses at the centre through the digitalisation of the public administration, which is the engine of development for the whole country.
- b) Promote sustainable, ethical and inclusive development, through innovation and digitalisation at the service of people, communities and territories, while respecting environmental sustainability.
- c) Contribute to the spread of new digital technologies in the Italian productive fabric, encouraging standardisation, innovation and experimentation in the field of public services.

Furthermore, in September 2020, Italy adopted a National Strategy on Artificial Intelligence (Strategia nazionale sull'intelligenza artificiale), linked to the EU policy on IA.7 Point 37 of the strategy affirms, 'As part of the use of AI for sustainable development goals, particular attention will be envisaged to the possible uses of AI in facilitating the access of disabled people and of the most fragile subjects to digital services. In particular, challenges can be envisaged specifically for the development of enabling technologies and the use of profiling and matching systems skills, to improve the ability of these categories to use digital technologies, in particular those based on AI'.

⁴ See Stanca, L. [Minister for Innovation at the time of the adoption of the Digital Administration Code], 'Quei dieci anni persi sul digital divide', *Il Sole24ore*, 22 March 2016.

⁵ The strategy, adopted in November 2020, is available at: <https://docs.italia.it/italia/mid/piano-nazionale-innovazione-2025-docs/it/stabile/la-strategia.html>.

⁶ See: <https://www.agid.gov.it/it/agenzia/stampa-e-comunicazione/notizie/2020/08/12/il-piano-triennale-linformatica-nella-pa-2020-2022>.

⁷ Available at: https://www.mise.gov.it/images/stories/documenti/Strategia_Nazionale_AI_2020.pdf. See also <https://www.mise.gov.it/index.php/it/strategia-intelligenza-artificiale/contesto>

Finally, the *National Strategy for Digital Skills (Strategia nazionale per le competenze digitali)*, adopted in July 2020,⁸ takes into account the situation of persons with a disability. The strategy identifies three areas of priority:

- a) Internet access for the working-age population with little or no digital skills and low level of education;
- b) The digital literacy of the working-age population that already uses the internet;
- c) The inclusion of/digital access for the elderly, women who are not employed or in particular conditions, immigrants, persons with disabilities and disadvantaged groups generally considered to have a low level of instruction.

Such priorities are reflected in five lines of intervention:

- a) Training courses for adults within the education system, in synergy with the schools and digital literacy initiatives (in particular within activities for lifelong learning in the provincial centres for adult education);
- b) Training courses within the non-formal educational circuit, based on the enhancement of lifelong learning, with online learning platforms that accompany the growth of the level of competence;
- c) Training path 'on the street' – training in digital and information skills in local areas, enhancing the role of local communities and public spaces (such as libraries), aiming to create networks of assisted digital access points and digital facilities;
- d) Communication paths, based on the belief that the processes of digital literacy and raising awareness require continuous communication, even with the effective and systematic support of the mass media;
- e) Digital inclusion path, with measures dedicated to disadvantaged social groups such as the elderly, people with low education or low income and persons with disabilities, through easy-to-use tools such as radio and television and interventions for digital facilitation (*italics added*).

Point e) is relevant to persons with disabilities.

There is no evidence of involvement of persons with disabilities in the development and implementation of these strategies.

As for the accessibility of texts, their digitalisation is for the benefit of people with visual disabilities; following infringement procedure 2018/0354, Italy approved Law 37/2019⁹ implementing directive (EU) 2017/1564.

The *National Recovery and Resilience Plan*,¹⁰ presented by the Government to Parliament on 26 April 2021, also contains important references to digitalisation. In fact, one of the six missions of the plan is precisely 'digitisation, innovation, competitiveness, culture' (the other five are green revolution and ecological transition; infrastructures for sustainable mobility; education and research; inclusion and cohesion; and health). Dedicated resources amount to EUR 40.73 billion, to which EUR 8.54 billion of national resources will be added.

⁸ Available at <https://assets.innovazione.gov.it/1610029655-dtd-1277-a-all1.pdf>.

⁹ See: <https://www.gazzettaufficiale.it/eli/id/2019/05/11/19G00044/sg>.

¹⁰ See: https://www.governo.it/sites/governo.it/files/PNRR_0.pdf.

Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility of products and services was recently approved. The Directive aims to facilitate the use of digital tools with an inclusive function and as a means to achieve the social, economic and political participation of people with disabilities. It also aims to homogenise the requirements for accessibility to such goods for people with disabilities ('an environment in which products and services are more accessible makes possible a more inclusive society and facilitates independent life', according to paragraph (2)). The 2019-2020 European delegation law, definitively approved in the Senate on 20 April 2021, also provided, in Article 1(1), for the implementation of this Directive, delegating to the Government the introduction of the necessary legislative decrees by June 2022.¹¹

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

Education

The Ministry of Education, University and Research adopted the *National Digital School Plan (Piano Nazionale Scuola Digitale)* in 2015¹² to launch an overall innovation strategy for Italian schools and to reposition its educational system for the digital era. The plan was provided for by Law 107/2015 on the reform of the national education and training system and delegation for the reorganisation of the legislative provisions in force.

In this Plan, a series of measures are envisaged with the aim of preparing 'suitable learning environments, capable of placing at the centre not technology but teaching practice, to support the development of skills, collaboration and active teaching, for problems and projects'.

The Plan emphasises the need to create an inclusive environment, in which spaces are able to prepare all students – 'no one excluded (not one less), for life-long learning', recognising that 'technologies enabling and active methodologies are decisive agents to remove obstacles, in favour of a 360-degree inclusion, from problems relating to disabilities, special educational needs, students unable to attend normal school'.

These principles are reaffirmed in Ministerial Decree No. 39 of 26 June 2020: *School Plan 2020-2021 – 'Document for the planning of school, educational and training activities in all institutions of the national education system' (Piano Scuola 2021 – Documento per la pianificazione delle attività scolastiche, educative e formative in tutte le Istituzioni del Sistema nazionale di Istruzione)*.¹³

Here, it is required that each school integrate the *Three-Year Plan of the Educational Offer* with the *School Plan for Integrated Digital Education*. Each school is therefore called upon to identify ways to redesign their teaching activity, with particular regard to the specific needs of pupils with disabilities, pupils with specific learning disabilities and those with other special educational needs. With this in mind, it is required to identify

¹¹ See: <https://temi.camera.it/leg18/provvedimento/la-legge-di-delegazione-europea-2019-2020.html>.

¹² See: <https://www.miur.gov.it/scuola-digitale>.

¹³ See: <https://www.miur.gov.it/documents/20182/2467413/Le+linee+guida.pdf/4e4bb411-1f90-9502-f01e-d8841a949429>.

‘necessarily and in advance the operational methods and strategies to guarantee all students the same possibilities, in terms of access to the tools necessary for full participation’.

To facilitate the adoption of the *School Plan for Integrated Digital Education* by individual schools, the Minister for Education issued Ministerial Decree No. 89 of 7 August 2020, on adoption of the guidelines on integrated digital education¹⁴ (*Adozione delle linee guida sulla educazione digitale integrata*), aimed at providing operational indications on how to organise integrated digital education (needs analysis, objectives to be pursued, tools to be used, timetable and frequency of lessons). Here, specific attention is given to students with disabilities and with specific learning disabilities in reference to which the guidelines require:

- a) that the central administration, the regions, local authorities and schools work to guarantee school attendance for pupils with disabilities with the involvement of support figures (educational operators for autonomy and communication and communication assistants for pupils with sensory disabilities);
- b) that the possible involvement of such pupils in complementary integrated digital teaching activities must be carefully evaluated, together with the families, verifying that ‘the use of technological tools constitutes a real and concrete benefit for them in terms of teaching effectiveness’. The decisions taken must be reported in the personalised educational plan.¹⁵

E-Health

As part of the Digital Agenda prepared by the European Commission in its implementation of the Europe 2020 plan and released on 19 August 2010, the Commission aims, with the involvement of the Member States and interested stakeholders, to spread the use of telemedicine services (by 2020).

In 2011, the Minister for Health adopted the *National e-Health Information Strategy* (*Strategia nazionale di informazione sulla sanità elettronica*) with the purpose of ensuring a harmonic, consistent and sustainable development of information systems, to support patient care and governance of the national health service, with increasing levels of interoperability between healthcare services.

From this perspective, one of the most important purposes is to implement a network system of integrated health services that allows the systematic monitoring and evaluation of key parameters such as clinical risk; diagnostic and therapeutic procedures with particular reference to their quality; allocated resources; technologies used; and the level of satisfaction as perceived by citizens.

Two central points of the strategy are:

- a) availability of the patient’s clinical history through integrated electronic health record systems (EHR);

¹⁴ See: https://www.miur.gov.it/documents/20182/0/ALL.+A+ +Linee_Guida_DDI_.pdf/f0eeb0b4-bb7e-1d8e-4809-a359a8a7512f.

¹⁵ The personalised educational plan is a document provided by the Ministry of Education which indicates which types of compensatory instruments the pupil can use during lessons or during the assessment tests.

- b) structural and organisational redesign of the health services network through telemedicine.

The EHR was established by Article 12 of Decree-Law 179 of 18 October 2012.¹⁶ It contains references to the services provided by the national health service and, starting from 19 May 2020, also by private health facilities.¹⁷

With Decree-Law 34 of 19 May 2020, converted with amendments by Law 77 of 17 July 2020, the EHR was simplified and strengthened. However, many differences remain between the Italian regions in the effective implementation of the EHR and in its usability for the purpose of overall improvement of the healthcare system.¹⁸

With regard to the second point, the first guidelines on telemedicine were approved in 2014, while the new version dates back to December 2020, when the new guidelines were approved at the State-Regions Conference.¹⁹

Moreover, in the past year, the COVID-19 pandemic has highlighted the potential of digital medicine for improving health care.

In this context, the Italian Institute of Health (Istituto Superiore di Sanità) also intervened. During the first phase of the spread of the virus in Italy, it indicated different types of home care needs that can be addressed in telemedicine,²⁰ including the needs of those who are suffering from chronic diseases, or who need to maintain specific care continuity during quarantine, isolation or during the period of social distancing rules (such as people with psychiatric pathologies or disabilities).

¹⁶ See: <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2012-10-18:179!vig>.

¹⁷ The progress of the implementation of the EHR in the regions and autonomous provinces and its diffusion throughout the national territory has been published on the website www.fascicolosanitario.gov.it.

¹⁸ Della Porta, M.R. and Mazzoni, E., 'Telemedicina e digitalizzazione dei servizi sanitari. Quali sinergie per una svolta necessaria', policy brief, February 2021, https://www.i-com.it/wp-content/uploads/2021/02/Policy-Brief_Telemedicina-e-digitalizzazione-dei-servizi-sanitari.pdf.

¹⁹ See: <http://www.statoregioni.it/it/conferenza-stato-regioni/sedute-2020/seduta-del-17122020/atti/repertorio-atto-n-215csr/>.

²⁰ See: *Indicazioni ad interim per servizi assistenziali di telemedicina durante l'emergenza sanitaria COVID-19*, Rapporto ISS Covid-19 n.12/2020, available at: <https://www.iss.it/documents/20126/0/Rapporto+ISS+COVID-19+n.+12+telemedicina.pdf/37b4b856-603a-76c1-1b85-5ff9c662bbbb?t=1586860608120>.

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

Italy adopted two versions of the *Biennial Action Programme regarding the implementation of the rights of persons with disabilities*, or BAP (*Programmi di azione biennale per l'attuazione dei diritti e l'integrazione delle persone con disabilità*), in 2013 and in 2017.

The first BAP²¹ referred to digital technologies, having regard to accessibility issues, underlining that 'Italian law frames the accessibility of IT tools among the conditions for implementing the constitutional principle of equality²² of citizens and provides indications on the requirements which ICT tools must comply with in order to be considered accessible'. The rules are aimed primarily at public administrations, public bodies and public service providers,²³ requiring them to:

- a) acquire IT tools suitable for use by persons with disabilities (with related sanctions to nullify contracts stipulated if the websites of public administrations do not comply with the established conditions of accessibility; these sanctions do not apply to other tools);
- b) equip employees with disabilities with accessible teleworking tools;
- c) guarantee the accessibility of teaching and training tools.

Since December 2009 – as highlighted by the BAP 2013 – there has been an observatory for monitoring the accessibility of public services,²⁴ but the process of adapting sites and applications, while proceeding in the right direction, has been extremely slow.

In addition, the first BAP underlined that '*It should also be considered as a general principle that the introduction of technology, where due attention and consideration is not given to the different needs and peculiarities of each individual, can lead to new and unexpected forms of social exclusion* such as, for example, in the case of blind and partially sighted people' (italics added).

Moreover, the Italian Government should 'promote with greater force the implementation of the right to access technologies and media, also through a specific commitment by the Agency for Digital Italy' (Chapter 6, intervention line 4). In particular, with regard to education, one of the actions identified was to 'guarantee training for all teaching staff aimed at the use of the latest generation of customisable technological tools and aids, also through the use of specific software, ensuring their constant updating' (Chapter 7, intervention line 5).

²¹ See Decreto del Presidente della Repubblica, 4 October 2013, https://www.lavoro.gov.it/documenti-e-norme/normative/Documents/2013/Decreto_del_Presidente_della_Repubblica_4_ottobre_2013.

²² As provided by Article 3(II) of the Italian Constitution: 'It is the duty of the Republic to remove those obstacles of an economic or social nature which constrain the freedom and equality of citizens, thereby impeding the full development of the human person and the effective participation of all workers in the political, economic and social organisation of the country'.

²³ The Agid should activate monitoring systems, through the system of spot checks.

²⁴ Currently, the observatory does not seem to be in operation.

In addition, it was necessary to reverse the trend of progressive slowdown in the implementation of the 2004 legislation,²⁵ reactivating at all (institutional and territorial) levels, strong attention to the issue of digital inclusion. The BAP emphasised that ‘The commitment undertaken by the government in 2012 with the establishment of the Agency for Digital Italy and the launch of the Italian Digital Agenda (ADI)²⁶ as well as with the issue of the Growth 2.0 provision (Decree-Law of 18 October 2012, No. 179).²⁷ – in which the measures for the concrete application of the ADI are envisaged – must result in a real advancement and development of accessibility to ITCs for people with disabilities . . . in particular, in the field of life and rehabilitation projects. In this context, it could be useful to reactivate forms of interinstitutional cooperation that were previously stimulated by the activity of the National Centre for IT in the Public Service (CNIPA)²⁸ through e.g., the Interministerial Commission for the use of ICT in favour of disadvantaged groups’.²⁹

As underlined by some disability activists, the BAP 2013 remained largely unimplemented, even with regard to digital technologies.³⁰

The second BAP, approved in 2017,³¹ contains more detail and is broader in scope regarding digitalisation and technologies than the previous one. With regard to architectural barriers and workplace accessibility, the BAP 2017 proposes to ‘make the use of forms of public financing automatic and complete *for interventions and assistive technology with high technological content*, too with reference to the removal of architectural barriers’ (italics added).

In a general fashion, the BAP 2017 underlines that in Italy there is a serious lack of knowledge ‘on the principles of accessibility and universal design, on technical solutions, assistive and home automation technologies, transport systems, etc., ensuring concrete improvements in urban systems, public buildings and private’; accordingly, the capacity of public and private operators to welcome people is also weak and does not adequately correspond to their specific needs. As a result, a constant and intense activity of formation and awareness-raising is necessary for transport personnel, public servants, people who work in the field of cultural heritage,

²⁵ Law 4 of 9 January 2004, available at: <http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2004-01-09;4!vig=2021-04-22>.

²⁶ See Decree-Law 83 of 22 June 2012, ‘Misure urgenti per la crescita del Paese’, available at: https://www.agid.gov.it/sites/default/files/repository_files/leggi_decreti_direttive/dl-22-giugno-2012-n.83_0.pdf.

²⁷ Available at: <http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2012-10-18;179!vig=2021-04-22>.

²⁸ CNIPA was established by Article 176 of Legislative Decree 196 of 30 June 2003; in 2009, CNIPA was renamed DigitPA, and in 2012 DigitPA was terminated.

²⁹ The Interministerial Commission for the use of ICT in favour of disadvantaged groups was established by the Interministerial Decree of 25 July 2003, available at: http://web.mclink.it/ML1741/biblioteca/normative/comm_interministeriale_impiego_tecnologie.htm. The year 2003 was designated the European Year of People with Disabilities (EYPD) by the European Commission; the Italian Government, *inter alia*, published a White Book on technologies and disability (‘Libro Bianco: Tecnologie per la disabilità’), available at: https://www.edscuola.it/archivio/handicap/tecnologie_disabili.pdf.

³⁰ See Giacobini, C., ‘Programma di azione sulla disabilità: a che punto siamo?’, 22 April 2016, available at: http://www.handylex.org/gun/programma_azione_disabilita_2013_2015_il_punto.shtml.

³¹ See Decree of the President of the Republic of 12 October 2017, *Gazzetta Ufficiale* No. 289, 12 December 2017, available at: <https://www.gazzettaufficiale.it/eli/id/2017/12/12/17A08310/SG>.

security and emergency personnel and tourism and recreation personnel. Moreover, 'it is essential to stimulate a profound change of perspective cultural in universities and technical institutes: the courses of study in which the design, must fully acknowledge and share the principles and techniques of universal design; on the other hand it is necessary to [raise awareness about] a culture of accessibility starting with the younger generations since the early years of school'; this kind of awareness is essential in order to build a digital and technological environment that is accessible to every person.

The BPA 2017 takes into account the potential use of new technologies (even digital and information technologies) in emergency situations, referring to the Sendai Framework³² (Action 3). Moreover, the involvement of the enterprises is considered vital in order to build a more accessible world, also with regard to digital technologies ('*identification of strategies that favour the involvement of private enterprises for activities related to the accessibility of services, buildings, transport, suitable work contexts, information and new technologies*' (action 6; italics added).

At this time, the BPA 2017 is outdated. The National Observatory on the Condition of Persons with Disabilities (Osservatorio nazionale sulla condizione delle persone con disabilità), which is responsible for drafting the BPA, has faced an activity slowdown in past years, but in 2019 it issued a three-year work plan (2019-2022).³³ However, that work plan does not include detailed references to digitalisation.

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

At a national level, Italy lacks specific disability-related strategies other than the BPA. A partial exception is represented by the *National Plan for Persons with High Care Needs (Piano nazionale per la non autosufficienza)*, approved in November 2019.³⁴

Attachment F (*Allegato F*), entitled, 'Guidelines for the independent living projects' ('*Linee di indirizzo per i progetti di vita indipendente*') mentions new technologies (such as, for example, home automation technologies, technologies for social connectivity, etc.), concerning the safety of users and autonomy in the home environment (Ambient Assisted Living – AAL) and helping to counteract all forms of segregation. Attachment F remarks that 'such interventions must not be included in the lists of interventions related to the [Italian] National Health Service, [and] they cannot in any case be a substitute for support provided by the personal assistant as well as by other caregivers' (paragraph 28).

³² See the United Nations Office for Disaster Risk Reduction (UNDRR) (2019), *The Science and Technology Roadmap to Support the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030*, available at: https://www.preventionweb.net/files/65131_file.pdf. See also Bennett, D., 'Five Years Later: Assessing the Implementation of the Four Priorities of the Sendai Framework for Inclusion of People with Disabilities', in *Int J Disaster Risk Sci*, 11, 2020, pp. 155–166.

³³ Available at: <https://welforum.it/wp-content/uploads/2019/07/documento-di-proposte-per-OND-1072019.pdf>.

³⁴ See Decree of the President of the Council of Ministers of 21 November 2019, 'Adozione del Piano nazionale per la non autosufficienza e riparto del Fondo per le non autosufficienze del triennio 2019-2021. (20A00639)', *Gazzetta Ufficiale* No. 28, 04 February 2020, available at: www.gazzettaufficiale.it/eli/id/2020/02/04/20A00639/sg.

4 Promoting disability inclusion through funding, education and training

4.1 How funding promotes disability-inclusive digitalisation and digital transformation

First, with regard to public procurement, it is worth mentioning that Article 4 of the aforementioned Stanca Law affirms that accessibility requirements are essential in the procedures carried out by the entities identified in Article 3.³⁵

Otherwise, if the accessibility requirements are not met, public contracts for the development and editing of websites and mobile applications are void. Exceptions are possible if compliance with the accessibility requirements would impose a disproportionate or undue burden. As a result of research done for the underlying report we conclude that there is no data available about monitoring the implementation on public procurement.

It has to be noted that the Stanca Law has been updated several times, taking into account legislative acts adopted by the EU (as an example, Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies).

Moreover, the granting of public funds to private entities for the purchase of IT goods and services, including teleworking stations, intended for use partly by workers with disabilities or the public, is subject to the compliance of these goods and services with the accessibility requirements established by the guidelines referred to in Article 11 of the Stanca Law.³⁶ Notably, organisations of persons with disabilities have been involved in the drafting of the guidelines mentioned. Article 5 of Law 4/2004 provides that the regulation described shall also apply to training and didactic materials used in

³⁵ The public administrations referred to in Article 1(2) of Legislative Decree 165 of 30 March 2001 are 'public economic bodies, private companies providing public services, regional municipal companies, organisations involved in assistance and public rehabilitation, transport and telecommunication companies with predominantly public capital participation, IT service contractors, organisations of public law within the meaning of Article 2(1)(4) of Directive 2014/24/EU of the European Parliament and of the Council, of 26 February 2014, as well as all subjects who use public contributions or subsidies for the delivery of their own services via information systems or the internet.'

³⁶ Article 11, concerning technical requirements, provides that 'The Agency for Digital Italy, after consulting with associations more representative of people with disabilities, as well as those in the industrial sector involved in the creation of software for the accessibility of websites and mobile applications, in agreement with the Unified Conference referred to in Article 8 of Legislative Decree No. 281 of August 28 1997, issues, in accordance with the procedures and technical rules referred to in Article 71 of Legislative Decree No. 82 of 7 March 2005, specific guidelines with which, in compliance with the implementing acts adopted by the European Commission pursuant to directives on accessibility, are established: a) the technical requirements for the accessibility of the IT tools, including websites and mobile applications, in accordance with the principles referred to in article 3-bis and the values referred to in point 1), letter d), number 3, of Annex B to the Decree of the Minister for Innovation and Technologies on 8 July 2005, published in the Official Gazette No. 183 of 8 August 2005; b) the technical methodologies for checking accessibility of IT tools, including websites and applications furnishings; c) the model of the declaration of accessibility referred to Article 3-quater; d) the compliance monitoring and assessment methodology of IT tools, including websites and mobile applications, to the accessibility requirements; e) the circumstances under which, taking into account that provided for in Article 5 of Directive (EU) 2016/2102, is determined to be a disproportionate burden, for which the lenders can reasonably limit the accessibility of a website or mobile application. 2. The guidelines are updated or amended in accordance with the procedure referred to in paragraph 1.'

schools of each type and level. Article 9 states that '[f]ailure to comply with the provisions of this law on the part of the subjects referred to in article 3, first paragraph, is relevant for the purpose of measuring and evaluating the individual performance of the managers responsible and entails managerial responsibility and disciplinary responsibility within the meaning of articles 21 and 55 of the Legislative Decree No. 165 of 30 March 2001, without prejudice to any criminal and civil liability provided for by the regulations in force. Failure to comply with the provisions of this law on the part of the subjects referred to in Article 3, paragraph 1-*bis*, is ascertained and sanctioned by AgID [Agency for Digital Italy], without prejudice to the right of the subject discriminated against to act in accordance with Law No. 67/2006 of 1 March 2006. Where applicable, the provisions in chapter I, sections I and II, of Law No. 689 of 24 November 1981 shall apply. If, following the investigation, AgID identifies violations of the present law, it shall set a deadline for the elimination of these infringements on the part of the offender. In the event of non-compliance with the warning pertaining to the previous period, AgID shall apply an administrative fine of up to 5 percent of turnover.'

It is obvious that the purpose of the regulation is to create an accessible digital environment using public procurement as a leverage. The provisions of Article 9 encourage public entities to adopt a policy of compliance and to be 'digitally accessible'.

It should be noted that Law 120 of 11 September 2020³⁷ imposed accessibility requirements on private companies which have had an average turnover exceeding EUR 500 million in the past three years and which offer services to the public through websites or mobile applications.

In Italy, mapping funding to support digitalisation is not an easy task, as financial resources are often dispersed. As an example, a National Fund for Technological Innovation and Digitalisation³⁸ was created in May 2020, with a budget of EUR 50 million. The aim is to make relations between citizens and public services smarter and faster, and to create new services that are more reliable and technologically advanced. In December 2020, the Minister for Technological Innovation published a call for tender³⁹ to inform municipalities of the funding procedures; it should be noted that the call did not make reference to the rights of persons with disabilities. A total of 7 246 requests for funding were received, and 92 % of Italian municipalities applied for funding. It is impossible to evaluate the level of involvement of persons with disabilities in the organisation of this process, or to evaluate the future impact of these actions.

The regional frameworks are very different from one another; the grants offered by the regions are often occasional; and usually the related calls for tenders do not mention the inclusion of persons with disabilities as a priority issue.

³⁷ Available at: <http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2020-09-11:120!vig=2021-04-28>. Moreover, Law 120/2020 set up a digital platform to manage special authorisations to access limited traffic areas (*zone a traffico limitato* – ZTL) at a national level; at present, such authorisations are handled at municipal level.

³⁸ See Article 239 of Legislative Decree 34 of 19 May 2020, 'Misure urgenti in materia di salute, sostegno al lavoro e all'economia, nonché di politiche sociali connesse all'emergenza epidemiologica da COVID-19', converted into Law 77 of 17 July 2020, available at: www.gazzettaufficiale.it/eli/id/2020/05/19/20G00052/sg.

³⁹ Available at: <https://www.pagopa.gov.it/it/pagopa-spa/fondoinnovazione/avviso/>.

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

As specified in the BAP, the involvement of universities and professional associations is essential in the preparation of specific training courses aimed at training digital professionals on issues of disability and accessibility.

In this context, we emphasise the launch of certain degree courses on the subject in Italy. For example, biomedical engineering aims to train professionals (biomedical engineers) who are capable of combining knowledge relating to the methods and tools of engineering with the typical skills required in medicine and biology.

Courses of this type⁴⁰ are launched, for example, at the University of Pisa;⁴¹ at the Polytechnic of Bari;⁴² and at the Biomedical Campus at the University of Rome. Here, there are several specific curricula on E-health, Biorobotics and Ergonomics, Clinical Engineering, Nanotechnologies and Bioartificial Systems.⁴³ In these courses, there are no topics that directly concern accessibility or disability, but topics related to the improvement of technologies address the needs of people with disabilities. There are, for example, courses that investigate the problems inherent in the study of sensory and neuronal systems for the design of replacement prostheses and technical aids.

Alongside these courses, bionic engineering courses are also being developed. Bionic engineering is the new frontier of biomedical engineering. The term 'bionics' is increasingly used internationally to indicate a research area that integrates the most advanced robotics and bioengineering technologies with life sciences such as medicine, neuroscience, materials science, etc., with the ultimate goal of inventing and distributing a new generation of biomimetic machines, human-centred healthcare and (more generally) assistive technologies.

Within these courses, students have the opportunity to engage in:

- a) the design, development and testing of social robots and intelligent environments for assisted living, active ageing and wellbeing;
- b) the design, development and testing of neural prostheses, based on the use of neural tissue engineering and neural interfaces;
- c) the analysis of brain functions, and development of new methodologies for the processing of brain images;
- d) the design, development and testing of advanced prosthetic and orthotic devices for assisting the movement and rehabilitation of disabled people;
- e) the development and testing of advanced biomaterials for new implantable human-robot interfaces.

A course of this type has been jointly launched by the University of Pisa and the Sant'Anna School of Advanced Studies (Scuola Superiore Sant'Anna) of Pisa.⁴⁴

⁴⁰ See map showing the Italian universities offering study courses in biomedical engineering: <https://www.ingegneriabiomedica.org/ingegneria-biomedica-italia/>.

⁴¹ See: <https://www.unipi.it/index.php/lauree/corso/10559>.

⁴² See: <http://www.poliba.it/sites/default/files/didattica/regolamentodidattico/reg.l8.sistemi.medicali.a.a.2020-21.pdf>.

⁴³ See: <https://www.unicampus.it/ingegneria-biomedica-ammissioni/>.

⁴⁴ See: <https://www.santannapisa.it/it/formazione/laurea-magistrale-bionics-engineering>.

All these courses are important for developing an interdisciplinary approach, based on dialogue between scientists from different research fields, such as medicine, biology, neuroscience, and clinicians in the field of rehabilitation and surgery. On the basis of these assumptions, the professionals trained through these courses are able to design electro-medical equipment for diagnosis, therapy and rehabilitation; artificial organs and prostheses; and information systems dedicated to health and telemedicine. All are essential elements for improving the life and health of people with pre-existing or acquired disabilities.

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

As anticipated in section 3, the second BAP emphasises a serious lack of knowledge of the principles of accessibility, universal design, assistive technologies and home automation, which would be able to ensure concrete improvements in transport systems, urban planning systems and building, and the adaptation of public and private buildings. As a result of research done for the underlying report we conclude that the BAP is largely unimplemented. On the other hand, the guidelines on the accessibility of the AgID go in the direction indicated by the BAP.

At the same time, the BAP emphasises the importance of training in the topics indicated above for a variety of figures: public transport operators, public administration staff; operators in the tourism/hotel, culture and cultural heritage sectors; and security and emergency workers.

However, the BAP guidelines have remained largely unrealised or have been left to the initiative of individual private entities and institutions.

However, some progress has been made with regard to training for employees of public administrations (PAs) and schools.

With regard to training for PA employees, the BAP had provided for a specific action aimed at supporting institutional representatives in promoting the culture of accessibility to ICT at the government level through the action of AgID.

Following the approval of Legislative Decree 179/2012, some changes have been introduced to Law 4/2004 on accessibility: the obligations of digital accessibility have been extended to those who benefit from public funding; an obligation has been introduced for employers to provide specific budget allocations for workstations for employees with disabilities; training courses have been provided for public administration staff; and PAs are obliged to define their accessibility objectives annually.

The Decree also introduced, for AgID, the task of drafting technical specifications for assistive technologies. These specifications were provided for in Circular 2/2015.⁴⁵

⁴⁵ See:

https://www.agid.gov.it/sites/default/files/repository_files/circolari/agid_specifiche_postazioni_lavoro_0.pdf.

The *Three-Year Plan for Public Administration IT 2010-2022 (Piano Triennale per l'informatica della Pubblica Amministrazione)* was recently approved.⁴⁶ This plan contains lines of action to be taken to promote the digital transformation of the public sector and of the country. The plan focuses heavily on the figure of 'Manager for Digital Transition', the professional figure who has the task of supporting the inclusive path of the digital growth of the PA (central and local) and strengthening interventions in support of local administrations to bridge the gap between different areas of the country. Among the priority actions in the plan is providing for strengthening digital skills within public administrations through awareness-raising and training activities.

With regard, to teacher training, progress has also been achieved in relation to digital skills.

The data from the Organisation for Economic Co-operation and Development (OECD) 2013 Teaching and Learning International Survey (TALIS) placed Italy in first place for lack of ICT training for teachers: at least 36 % declared that they were not sufficiently prepared for digital teaching, compared with an average of 17 %. Italy was also the leading OECD country, by some distance, in terms of its percentage of teachers over the age of 50: 62 %, compared with an OECD average of 35 % in secondary schools.⁴⁷ In this context, Law 107/2015, known as the Good School Law, has introduced compulsory in-service training for teaching staff.

Furthermore, the *National Digital School Plan* identifies specific goals and actions. The goals are:

- a) to strengthen staff preparation for digital skills, reaching all actors in the school community,
- b) to promote the link between educational innovation and digital technologies,
- c) to develop effective, sustainable and continuous standards for training in educational innovation,
- d) to strengthen training in didactic innovation at all levels (initial, incoming, and in-service).

In addition, the *School Plan 2020-2021 – 'Document for the planning of school, educational and training activities in all institutions of the national education system'* envisages specific actions for personnel training.⁴⁸

In particular, it is envisaged that educational institutions will organise specific training activities for teaching and administrative, technical and auxiliary (ATA) staff on the use of new technologies for various tasks and professional activities (teaching, technical and administrative activities, reception and surveillance).

These activities concern:

⁴⁶ See: https://www.agid.gov.it/sites/default/files/repository_files/piano_triennale_per_l_informatica_nella_p_a_2020_2022.pdf.

⁴⁷ OECD, *Education at a Glance 2014*, <https://www.oecd.org/education/Education-at-a-Glance-2014.pdf>.

⁴⁸ See: <https://www.miur.gov.it/documents/20182/2467413/Le+linee+guida.pdf/4e4bb411-1f90-9502-f01e-d8841a949429>.

- a) innovative teaching and learning methodologies;
- b) innovative methodologies for school inclusion;
- c) interdisciplinary teaching models;
- d) methods and tools for evaluation, including in the light of innovative teaching and learning methodologies implemented, for example through multimedia technologies.

While these provisions focus on digital skills, there are no specific provisions aimed at enhancing knowledge of accessibility with a view to ensuring the inclusion of persons with disabilities.

Also, in the field of education, in 2020 a memorandum of understanding was signed between AgID and the Conference of Rectors of Italian Universities (CRUI) in order to coordinate activities regarding promotion of the digital transformation of the university and research system. Among the objectives (Article 2) of the protocol are:

- a) to promote and disseminate a digital culture and contribute to the digital transformation of public administrations;
- b) to launch common initiatives on issues related to digital transformation and the use of ICT technologies, and also aimed at encouraging the implementation of gender and inclusion policies through university training.

Within this protocol, various seminars have been organised to enhance the topics covered in the *Three-Year Plan for Public Administration IT 2020–2022* and to enhance skills relating to accessibility and usability.

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

The lack of digital training concerns Italian society as a whole (see section 5.2 of this report); persons with disabilities are particularly affected by the absence of digital training.

In this context, the Minister for Technological Innovation adopted, in July 2020, a *National Strategy for Digital Skills*, as already mentioned in section 2.1 of this report. At present, the actions for improvement of digital skills targeted at persons with disabilities and their specific needs are still in a start-up phase. The *Operational Plan for the National Strategy for Digital Skills*,⁴⁹ approved in December 2020, mentions, as a future initiative, the 'Identification, and purchase, through an IT platform, of assistive tools and technologies (e.g., PC, Tablet, optical sensors, SW, etc.) for the teaching of pupils and students with disabilities' (action 7, first line).

In a general way, the line of action n. 4 of the *Operational Plan* provides that the public entities will act in order:

- a) to value experiences and initiatives that have proved effective, favouring their replicability and expansion;

⁴⁹ See: *National Strategy for Digital Skills: Operational Plan*, available at: <https://repubblicadigitale.innovazione.gov.it/assets/docs/Piano-Operativo-Strategia-Nazionale-per-le-competenze-digitali.pdf>.

- b) to address the issue of the development of digital skills in a differentiated way to identify gradual objectives and targeted actions, to involve those who play a role of facilitators towards citizenship in different ways;
- c) to integrate the availability of skills and places of education in the local area (e.g., schools, libraries, associations, digital facilitation points, etc.) as well as transmission opportunities (radio, television, and the internet) according to a hybrid approach, in a general logic of resources networking;
- d) to follow a multi-stakeholder approach, maximising integration and collaboration between different actors.

Moreover, the *Operational Plan* includes:

- a) the realisation of a project aiming to carry out information campaigns regarding communication about the benefits of using assistive technology-based solutions, and the advantages deriving from possessing the basic digital skills, targeting mainly elderly persons and people with disabilities (action 17);
- b) the realisation of a project aiming to provide an amount of money (using prepaid cards or vouchers) to disadvantaged people (such as elderly, people with low education or low income, people with disabilities and unemployed women) to cover costs for digital training and digital literacy (action 24).

Currently, some third sector organisations are pursuing interesting initiatives concerning the advancement of digital skills for people with disabilities. As an example, the ASPHI Foundation has promoted some courses intended to provide the educational training required to obtain the European Computer Driving Licence (ECDL), providing teaching materials ad hoc for deaf persons and those with mild intellectual disability.⁵⁰

⁵⁰ See: <https://asphi.it/2015/05/12/materiale-formativi-sulla-nuova-ecdl-per-persone-con-difficolta-nella-comunicazione/>.

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

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

The field in which they are most consolidated is that of rehabilitation, where artificial intelligence and robotic systems have been used for some years.⁵¹

In the field of health, the application of technologies for the rehabilitation of children with physical or intellectual disabilities is also well consolidated.

As an example, we can cite the experience of CARELab (Computer Assisted REhabilitation Lab).⁵² CARELab is a clinical and research laboratory within the Don Gnocchi Foundation for the technologically assisted rehabilitation of the child at the Santa Maria Nascente centre in Milan. CARELab's activities are based on the VITAMIN (Virtual realITy pIAtform for Motor and cognITive rehabilitationN) software platform, which is dedicated to the translation of rehabilitation rationales for various clinical needs, both motor and cognitive, into digital language in the form of games. In CARELab and in similar experiences, the execution of exercises in a context of images and sounds puts play and imagination at the service of the rehabilitation of little ones. Furthermore, the use of technological platforms allows the systematic collection of information on the methods and effectiveness of the proposed exercises, providing researchers with useful data to continue to refine increasingly tailored tools and methods.

As indicated in the *National Recovery and Resilience Plan* presented by Italy to the European Commission on 30 April this year, telemedicine services help to address the main challenges of national health systems and represent a significant means of:

- a) contributing to reducing the current geographical and territorial gaps in health terms, thanks to harmonisation of the standards of care guaranteed by technology;
- b) ensuring a better care experience for patients;
- c) improving the efficiency levels of regional health systems by promoting home care and remote monitoring protocols.⁵³

For this reason, the recovery plan intends to fund telemedicine projects proposed by the regions on the basis of the priorities and guidelines defined by the Ministry of Health. The projects will cover every clinical area and promote a wide range of functions along the entire prevention and treatment path: teleassistance, teleconsultation, telemonitoring and tele reporting. This plan has been positively received by the DPOs, because many of their requests have been accepted.⁵⁴

⁵¹ Parobelli, E and Rotolo, A., *L'innovazione digitale nei servizi di welfare. Stato dell'arte e prospettive*, Egea, 2019, available at: https://www.sdabocconi.it/upl/entities/attachment/OCAP_1_2019.pdf.

⁵² See: <https://www.dongnocchi.it/@servizi/care-lab>.

⁵³ In the context of a generalised delay in the field of digitalisation of services, the health sector is the one on which there has been more interventions and more attention from the political decision-maker. The analysis of the Italian national recovery plan seems to confirm this hypothesis.

⁵⁴ See: <http://www.handylex.org/news/2021/04/30/il-piano-nazionale-di-ripresa-e-resilienza-p-n-r-r>.

In the labour market, the digitalisation process can also play a fundamental role in the full inclusion of persons with disabilities.

The technological revolution is radically transforming the world of work, and the COVID-19 pandemic has accelerated the expansion of the digital economy. We are therefore seeing the creation of new professions; the rapid obsolescence of some professions; changes in traditional jobs and recruitment processes; and even the emergence of new types of jobs.

It is necessary to make the most of the potential that digitalisation can present to overcome these situations of inequality.

In fact, digital tools allow people with disabilities to directly access work through online recruitment platforms and can support people with disabilities in their daily tasks at work, and they can also open up new employability scenarios through access to new types of employment.

For this to happen, it is necessary:

- a. to make digital tools accessible, including through the support of special assistive technologies;
- b. to provide adequate training for the improvement of digital, technical and scientific skills.

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

As the 'Digital Economy and Society Index (DESI) 2020 – Italy' profile points out,⁵⁵ Italy ranks 25th out of 28 EU Member States in the 2020 edition of the DESI (p. 3) and '[t]here are significant gaps as regards human capital. Compared with the EU average, Italy records very low levels of basic and advanced digital skills. The number of ICT specialists and ICT graduates is also well below the EU average. These gaps in digital skills are reflected in the low use of online services, including digital public services. Only 74 % of Italians are regular internet users. Although the country ranks relatively high in its offer of e-government services, public take-up remains low. Similarly, Italian enterprises lag in the use of technologies such as cloud and big data, as well as in the uptake of e-commerce [...]']

In such a context, the digital divide is an urgent issue, as it has emerged during the pandemic.⁵⁶

As Istat, the Istituto nazionale di statistica (Italian National Institute for Statistics) report *Citizens and ICT (Cittadini e ITC)*,⁵⁷ remarks, 'In 2019, 38 796 000 people aged 6 and

⁵⁵ Available at: <https://digital-strategy.ec.europa.eu/en/policies/desi-italy>.

⁵⁶ See: Zuddas, P., 'Covid-19 e digital divide: tecnologie digitali e diritti sociali alla prova dell'emergenza sanitaria', in *Osservatorio AIC*, 3/2020, pp. 285-307, available at: https://www.osservatorioaic.it/images/rivista/pdf/2020_3_17_Zuddas.pdf; Saraceni, G., 'Digital Divide e Povertà', in *Diritti fondamentali*, 2/2019, available at: <http://dirittifondamentali.it/wp-content/uploads/2019/10/Saraceni-Digital-Divide-e-Povert%C3%A0.pdf>.

⁵⁷ Available at: <https://www.istat.it/it/archivio/236920>.

over surfed the internet at least once online within three months, 812 000 more than the previous year' (p. 1), but just 29.1 % of internet users aged 16-74 have good digital skills.⁵⁸ In addition to age, 'Another discriminating factor is the level of education, even if just over half of the graduates who use the internet have high digital skills (52.3 %). If the four dimensions⁵⁹ based on which the composite indicator is calculated are analysed separately, it emerges that internet users have more advanced digital skills for e-skills related to the domain of communication (72.3 %) and information (61.8 %) compared with those related to the ability to solve problems (49.8 %) and to use software to process/convey digital content (42.6 %)' (p. 12).

The information provided by Istat contains scarce specific data regarding the effect of the digital divide on persons with disabilities. The report *Knowing the disability world (Conoscere il mondo della disabilità)*,⁶⁰ published in December 2019, underlines that 'The web offers people excluded from cultural life due to their disabilities some opportunities to break the isolation, including through the purchase of goods and services. In the period 2016-2017, 17.4 % of the Italian population bought tickets for various kinds of shows for oneself or others of the population without limitations, [...].

Among those with severe limitations, the percentage is 12 %. No significant territorial differences are observed, and this constitutes an indirect advantage for the South. Unlike what happens in the absence of disabilities, the levels of purchasing cultural goods and services online of persons with severe limitations present a gender difference unfavourable to women: men who buy tickets for shows online are 13 %, women 10 %. Among non-native digital and older Internet users, only 3% of those with severe limitations buy tickets for shows online, against 11 % of them peers without limitations' (p. 100); moreover, the report remarks that 'The ability to be connected to the Internet, especially from mobile devices, and digital technologies have changed numerous areas of daily life, introducing alternative forms of communication, breaking down numerous physical barriers and making possible new ways of contact. In particular, social networks allow to communicate and exchange information quickly – i.e., the messaging functions, like WhatsApp or Messenger – and to easily produce and share content to multimedia, such as photos, videos, animations. In Italy, 49.2 % of people with severe limitations (and 60.3 % of people without severe limitations). [...] if the share of people is among the regular users of the Internet between 14 and 64 years with limitations participating in social networks is lower than that of people who do not, they have (90.3 % vs 97.6 %), higher participation is observed among those over 64 with disabilities in virtual networks than that of peers without limitations (9.7% against 2.4 %). Social networks represent a valid socialisation alternative for people with limitations that live without any social network; in the group that we have defined as "isolated" with serious limitations, there are, in fact, percentages of participation in social networks higher than those recorded in the rest of the population without social networks (7.8 % vs 2.3 %).' (p. 97).

At the national level, the major problems encountered in the development of digitalisation and new technologies, and therefore the challenges to be faced, mostly concern three aspects:

⁵⁸ This percentage increases to 41.5 % among persons aged 20-24.

⁵⁹ Information skills, Communication skills, Problem-solving skills, Software skills.

⁶⁰ Available at <https://www.istat.it/it/files//2019/12/Disabilit%C3%A0-1.pdf>.

- a) the fragmentation of institutional actors and the consequent plurality of rules on access, operation and funding of the services necessary for taking care of persons with disabilities;
- b) the limited capacity for a unitary response to the needs of people with disabilities on the part of the public service network. Families often organise themselves at the local level, promoting themselves together with other private entities (and, sometimes, public bodies) of new services, increasing the fragmentation of the services and responses mentioned above.
- c) the strong territorial differences in the availability of services for people with disabilities, rules of access and participation in spending. Differences, which also occur within individual regions, affect the overall fairness of the system.⁶¹

All these elements make it more difficult for the positive effects of technology to penetrate in a widespread and equitable manner throughout the country.

Experience of the application of technologies to services (residential and semi-residential) for persons with disabilities is still scarce and still in the testing phase.⁶² For example, Law 112/2016 on provisions on assistance in favour of people with severe disabilities without family support (*Disposizioni in materia di assistenza in favore delle persone con disability grave prive del sostegno familiare*) provides for the launch of 'intervention programs aimed at fostering de-institutionalisation and autonomy paths in apartments that reproduce the living conditions and relationships of the family home, and that also take into account the best opportunities offered by new technologies, in order to prevent the isolation of people with severe disabilities'. However, the Law is still largely unimplemented.

During the pandemic, the relevance of digitalisation in the fields of work and education emerged. With regard to working activities, some legislative measures required people with disabilities, during the acute pandemic phase, to adopt smart working arrangements. As remarked by some activists, the difficulties faced during the COVID-19 pandemic anticipate the risks of exclusion from the labour market that persons with disabilities will face in the future, unless the digitalisation process becomes fully inclusive.⁶³

The relevance of the digital divide is particularly clear regarding education: the e-learning measures have reduced the relational component of the educational process as conceived in Italy,⁶⁴ and have revealed the size and depth of the digital divide: For many pupils with disabilities, e-learning (*didattica a distanza*) during the COVID-19 emergency has been a discriminatory factor⁶⁵ and has also shown the size and depth of the digital divide.

⁶¹ Parobelli, E. and Rotolo, A., *L'innovazione digitale nei servizi di welfare. Stato dell'arte e prospettive*, Egea, 2019, p. 15, available at:

https://www.sdabocconi.it/upl/entities/attachment/OCAP_1_2019.pdf.

⁶² A. Rotolo (2018), *Innovazione tecnologica nel settore LTC. Diffusione e prospettive*.

⁶³ See: A. Servidori, Ministero per la Disabilità e Inclusione Digitale, 23 February 2021, available at: <https://www.startmag.it/blog/ministero-per-la-disabilita-e-inclusione-digitale/>.

⁶⁴ See: 'Pandemia: gli alunni con disabilità hanno ancora diritto all'inclusione scolastica?', 18 March 2021, available at: <http://www.handylex.org/news/2021/03/18/a-causa-della-pandemia-gli-alunni-con-disabilita-hanno-ancora-diritto-all-inclusione-scolastica>.

⁶⁵ See Vivaldi, E. and Addis, P., *European Semester 2020-2021 country fiche on disability equality – Italy*, available at: <https://op.europa.eu/en/publication-detail/-/publication/e0678c0a-a71b-11eb-9585-01aa75ed71a1/language-en>.

6 Conclusions and recommendations

6.1 Conclusions

Italy seems to be a latecomer in a digital world. Recently, the Italian Government has adopted relevant strategic documents to bridge the digital divide, but the unique needs of persons with disabilities in accessing digital goods and services are still overlooked. The Italian legal framework for digital accessibility is defined by the Stanca Law (Law 4/2004), which aims to create an accessible digital environment using public procurement as a lever.

However, this framework has proven insufficient to promote a full and inclusive digital transformation.

Furthermore, in order to achieve digital inclusion, it is not sufficient to provide advanced and accessible infrastructures and services – a significant and focused investment, including financial resources, is essential for the spread of adequate skills and the improvement of digital competences.

6.2 Recommendations

To the Minister for Technological Innovation and Digital Transition:

- Make digital tools accessible, also through the support of special assistive technologies, and provide adequate training for the improvement of digital, technical and scientific skills. This would allow people with disabilities to face the changes that have emerged in the labour market and seize the opportunities that these changes offer.
- Update the funding system for the purchase of technological devices by persons with disabilities.

To the Minister of Health, to the Minister for Technological Innovation and Digital Transition, and to the Regions:

- Invest in the strengthening of telemedicine services, in order to reduce the current geographical and territorial gaps in terms of health thanks to the harmonisation of care standards guaranteed by technology.
- Ensure a better care experience for patients; improve the efficiency levels of regional health systems by promoting home care and remote monitoring protocols.

To the Minister of Education:

- Build a consistent, inclusive, and long-lasting system of digital education, giving persons with disabilities the necessary tools to be included in a digitalised society and an evolving job market.

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